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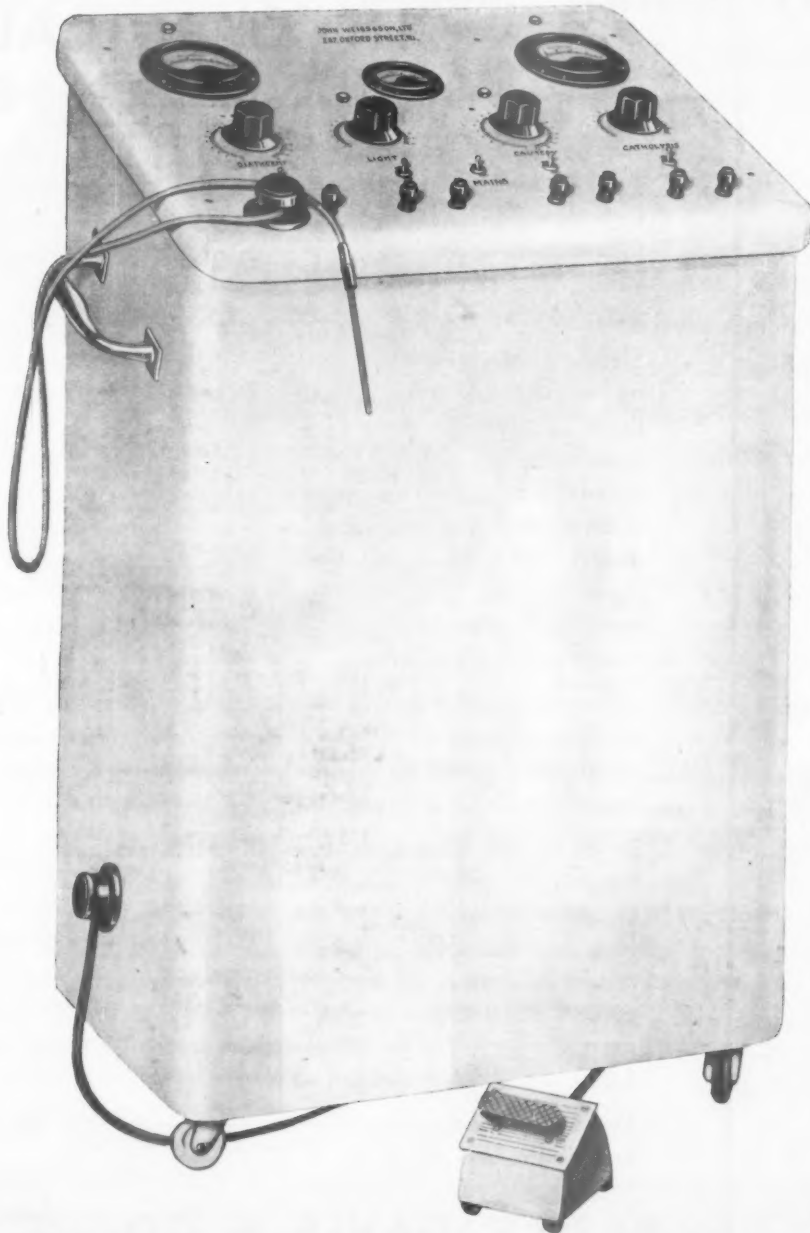
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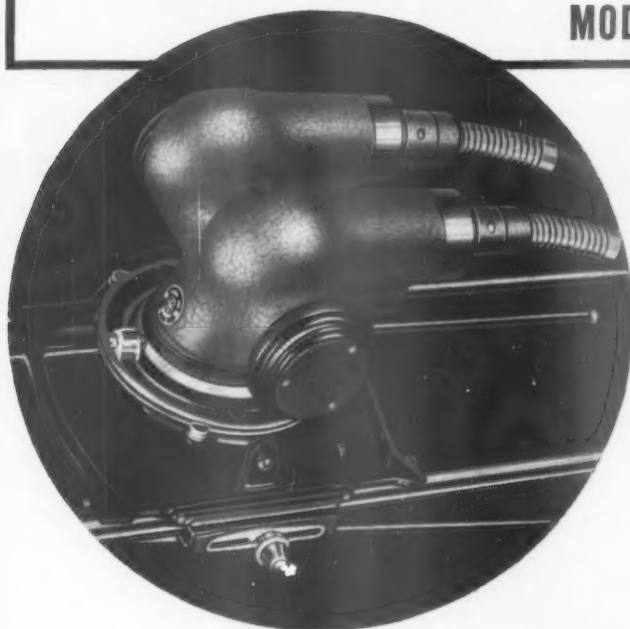
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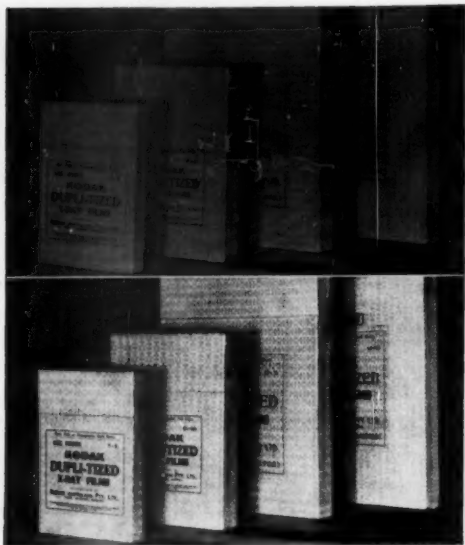
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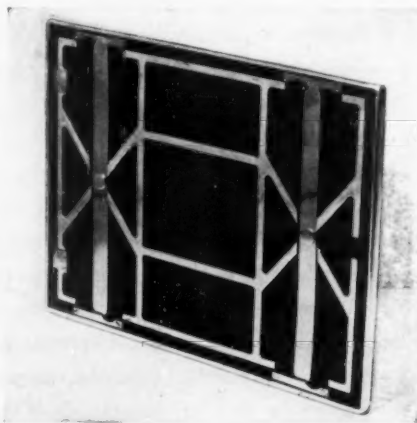
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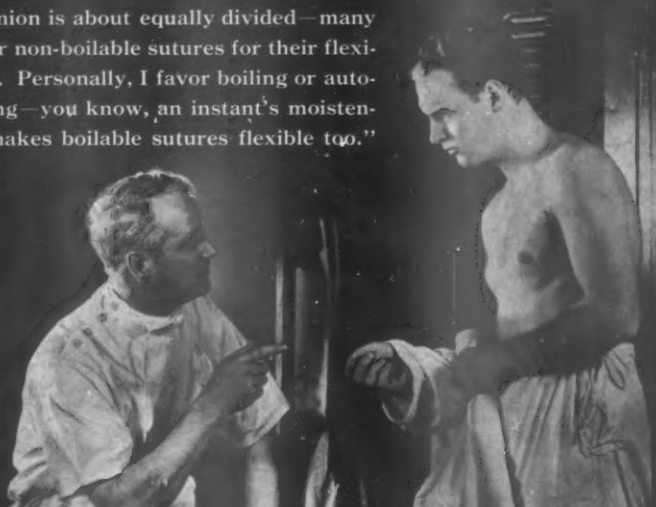
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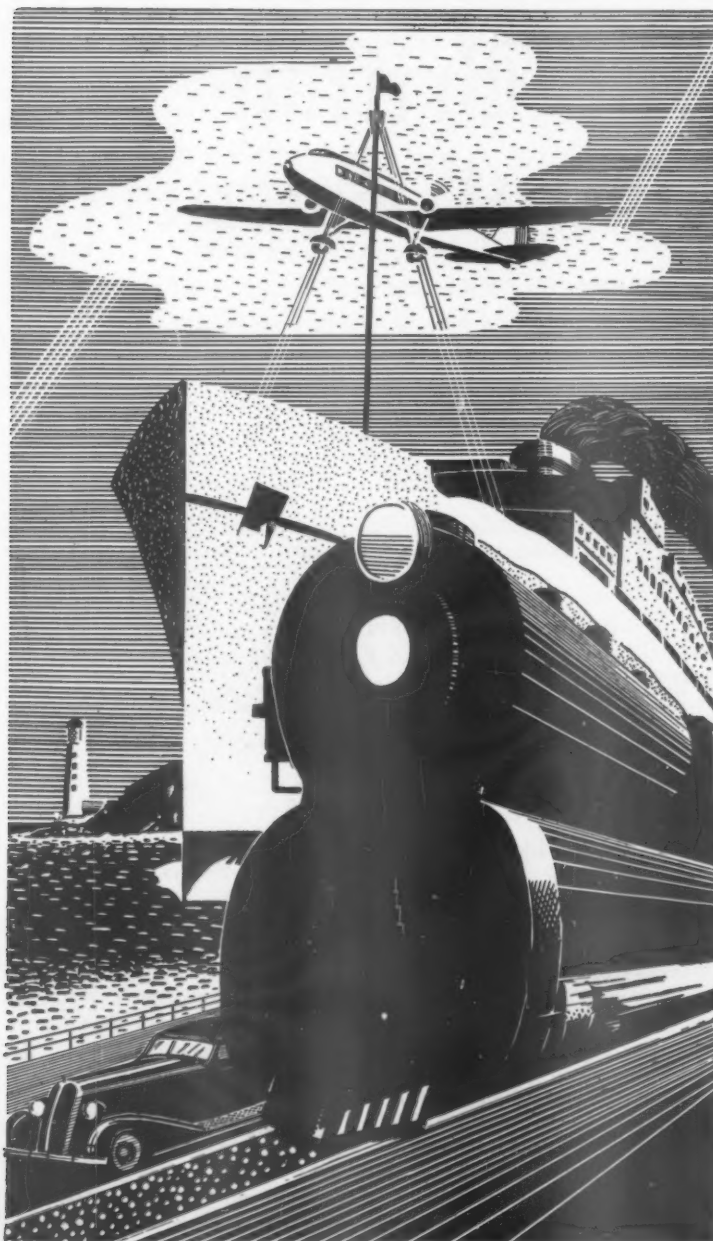
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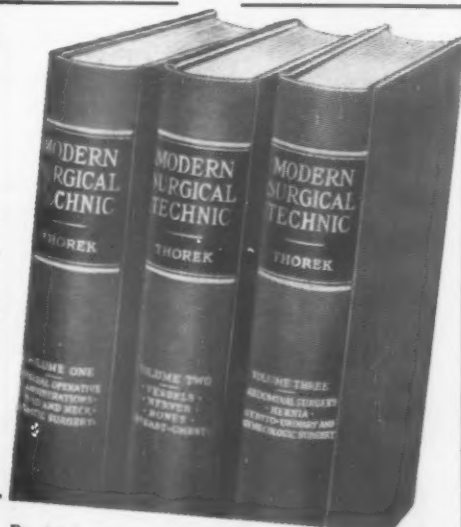
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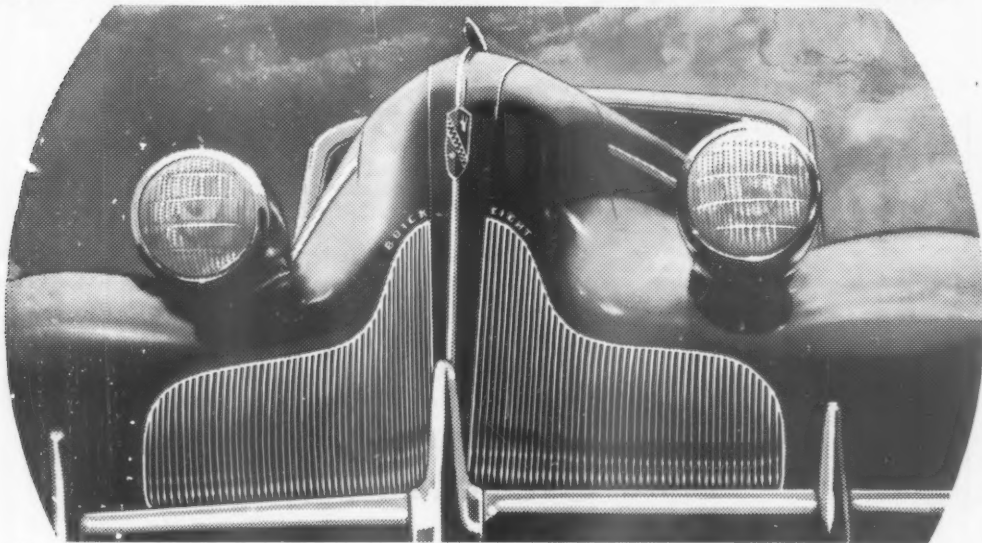
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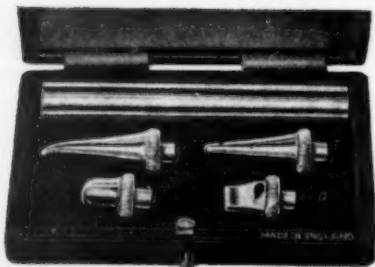
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(*The Lancet*, January 7, 1939, page 30.)

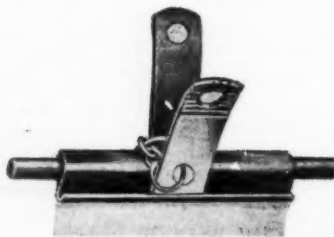
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(*The Lancet*, March 18, 1939, page 638.)

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(*The Lancet*, January 14, 1939, page 91.)

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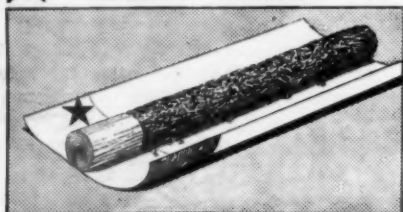
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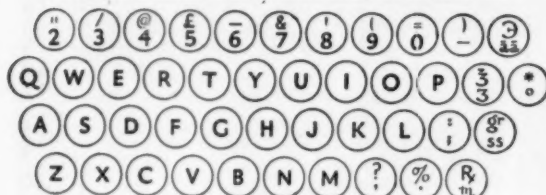
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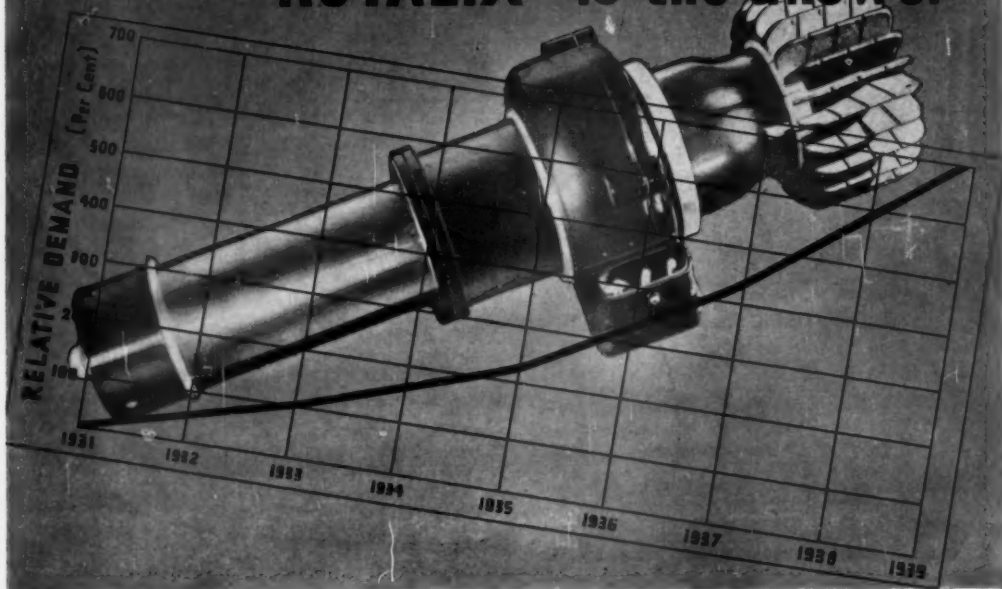
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No. 1.

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### SIR KENELM DIGBY AND HIS "CHOICE RECEIPTS".

By K. F. RUSSELL,  
*Melbourne.*

In these enlightened days of modern surgery it is interesting to turn back to the period in which the practice of surgery was still in its infancy. Although much is to be learned from perusal of the orthodox books on surgery, in this sketch we will peer into a quite unorthodox portion of its history.

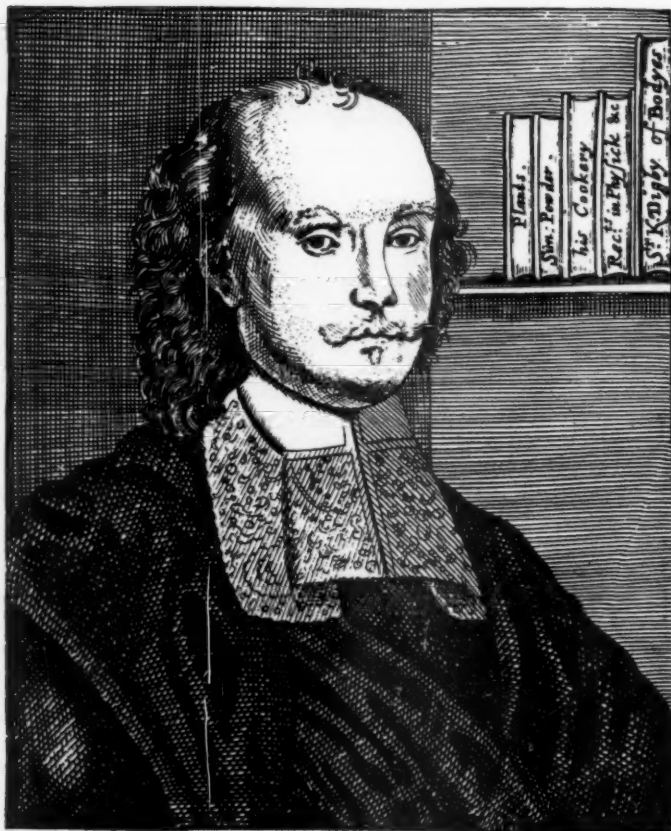
Throughout the sixteenth, seventeenth and eighteenth centuries it was the practice for many families to keep manuscript books in which were written recipes for cures and panaceas for all the ills of man. These recipes were gleaned from many sources and were handed down from generation to generation as homely remedies.

Many of these manuscript books are still in existence, but not a few were printed in book form for the greater benefit of the public. Such a book appeared in 1668, the author being Sir Kenelm Digby and the title: "Choice and Experimented Receipts in Physick and Chirurgery, as also Cordial and Distilled Waters and Spirits, Perfumes, and other Curiosities." This, the rare first English edition, was "Translated out of several Languages by G.H." (George Hartman).

The author, whose portrait from the book forms the illustration to this sketch, had a somewhat turbulent career. Born in 1603, he was the son of Sir Everard Digby. His father had the bad judgement to rise in arms on the occasion of the gunpowder plot, for which regrettable lack of taste he lost his head at the hands of the public executioner on January 27, 1606.

The young Kenelm was educated at Oxford, and in 1621 he went to France and the Continent to improve his knowledge. On his return from his travels Charles I knighted him and appointed him a commissioner for the Navy. In 1628 he fought against the Venetians at the head of his own squadron of ships.

Returning to England in 1638, he espoused the cause of the King, for which he was promptly imprisoned by Parliament. His release having been effected by the French Queen Mother, he retired in some disorder to France, where he was welcomed at the Court and made Chancellor to the Queen



The truly Learned and Hon<sup>ble</sup>  
 S<sup>r</sup>. Kenelm Digby K<sup>t</sup>. Chancellor  
 to the Q<sup>u</sup>. Mother  
 Aged 62 .

Griffiths sculpsit



Mother. Banished upon pain of death from England by Parliament, he returned to London during the rule of Cromwell, whose intimate friend he was.

After the Restoration he was appointed one of the Council of the newly formed Royal Society, which post he filled until his death in 1665.

Always interested in scientific pursuits, he wrote a large number of books, amongst which are: "A Conference about a Choice of Religion", 1638; "A Treatise on the Nature of Bodies", 1644; "A Discourse on Vegetation", 1661; "Observations on the Religio Medici by Sir Thomas Browne"; "On the Cure of Wounds by the Power of Sympathy", 1658.

His "Choice Receipts" makes delightful reading, even if it reflects adversely on the credulity of his fellow men. Many of the recipes are compounded of nauseous constituents, but when one remembers that powdered vipers, human skull bone and animal excreta were present in the official pharmacopœia, these recipes are not so fantastic as they now appear.

The following have been chosen from the book for their surgical reference, and it would be interesting to study the reactions of modern patients if they were confronted with prescriptions similar to any of the following. The spelling and phraseology have been left as they appear in the book.

#### For the King's-Evil.

A most contumacious foul inveterate King's-evil (several times touched by the King, and wrought upon by the best chyrurgeons and given over as desperate) was perfectly cured thus:

Take Garden-snails that have white or gray houses upon them, and beat them in a Mortar with a little Parsly into consistence of a Plaister, and so apply it to the sore or sores, and change it for a fresh every twenty four hours. This is also good to take away the raging pain of the Gowt.

#### A certain Remedy for the Retention of Urine.

Make a strong decoction of Horse-radish Roots in white wine, put to it a little Hares Wool dried in powder. Drink of this Decoction morning and night. You will see the effects of it speedily.

#### An experimented Remedy for the Stone.

A certain Person at Rome was sick of a great stone in his bladder, who after many Remedies (taken in vain) was resolved to be cut; having agreed with the Operator, this following Remedy was proposed to him by a Priest who had made trial upon himself and many others. It is thus:

Take a good quantity of Millepedes, wash them with white wine, then put them into a glazed Pot; Lute and close it well, and set it in an oven to dry the Millepedes: Then reduce them to fine Powder; then put to this Powder as much White Wine as it will drink up; then put it in the oven again as before. Then take this powder, and mix it with strawberrie-water, and a scruple of Oyl of Vitriol, and dry once more in the oven; then keep it in a Glass close stopped. Of this powder the patient took four scruples and half an ounce of Aquavita mixt with some fit Broath in the morning fasting; the effect of it was thus: The patient found himself in great pain and was much tormented, for the space of two hours; And after five hours passed he made a little urine, but very thick. The second day having taken this Medicine again, his urine was much thicker than the first. The third day he avoided a great deal of sand. And on the ninth day the Patient was perfectly cured from his stone.

#### Another approved Remedy for the stone and Gravel, and for Strangury of Urine.

Take the fat of a Buck Rabbit, melt it, and Anoint the Back and Reins with it. This will open the passage of Urine wonderfully. A child was cured with this; so that in twenty four hours it made four Pots full of Urine.

An Oyntment for Burning.

Take Cows-dung, and put to it a sufficient quantity of Seindoux (Hogs-grease), fry or boyl them together till they are well incorporated: Then strain the liquor through a napkin; and when it is cold, you will have a green Ointment: which is excellent for Burnings.

For a Fellon.


Take Garden-snails, and beat them in a Mortar, shels and bodies and all, till they be smooth and like an Uniform Unguent; then apply this like a Poultise, and when it beginneth to stinck, (which it will do in a few hours) change it. This will cure in two or three days.

An expedite and sure cure for the Gonorrhoea.

Purge the patient very well three or four times, and give him smoothing Emulsions. Then take Venice Turpentine, wash it well with Rose-water, and make it into a reasonable thick body for Bolus's with subtile Powder of Mastick; about the fourth part will serve. Take of this every morning fasting two or three drams, and drink upon it a good draught of new milk, if you sup not. Do the like at night going to bed. You will be well in ten or twelve days.

An approved Remedy for Ruptures.

A child was cured of a Rupture thus: Take Cow Dung, warm it well before a fire, and so lay it as a Cataplasme upon leather, and strow upon it some Cummin-seeds, and so apply it hot to the Rupture: When it is grown cold, put on a new one. This course they continued two days (in bed) and the child was perfectly cured, and also many others. It is excellent, especially when it is Hernia Ventosa.



## PRESIDENTIAL ADDRESS.<sup>1</sup>

By SIR HUGH DEVINE,

*President of the Royal Australasian College of Surgeons.*

My first duty is to extend to you, Sir Frederick Mann, the thanks of the Fellows of our College, assembled here, for your acceptance of the invitation to this meeting and for your presence with us tonight.

In the presidential address it is usual to say something of the progress of the College during the past year, and to give some indication of its policy for the immediate future. I shall be very brief in this respect, because I wish that your time should be occupied in listening to what, I think, will be a very interesting Syme Oration. Before saying anything in regard to College activities, however, I should like to offer, on your behalf and on that of my College, some words of welcome to Sir Alfred Webb-Johnson, the Syme orator, who has come from England to deliver the oration which you are about to hear. We are indeed fortunate that such a distinguished surgeon and man of letters should come so far for this purpose. Sir Alfred, as many of you know, is the senior surgeon of the Middlesex Hospital; indeed, this recently built hospital owes its new existence almost entirely to him. Sir Alfred is also a member of the Council of the Royal College of Surgeons of England, and can ill be spared from the important duties that he carries out in this body. He brings with him a message of greeting from this Royal College. He has, too, an even more important trust from the point of view of all of us: he is Queen Mary's personal surgeon; and, as you have just heard, he has brought to this College a gracious message from Her Majesty. I should like Sir Alfred to know how grateful we are to him for making the long journey to Australia to do honour to the first President of our College, Sir George Adlington Syme.

For the benefit of those who perhaps may not appreciate the necessity for the existence of an Australasian College of Surgeons, some brief explanation may be necessary. A college of surgeons in Australasia was required for the same reason as colleges of surgeons have been necessary for over a hundred years in Great Britain; that is, that, like the ancient Guild of Surgeons of England, it might control education in the art and science of surgery, and pass knowledge on from one generation to another. Moreover, besides its being necessary to establish a recognizable standard of surgical proficiency, a fellowship, a college was also needed, in countries like Australia and New Zealand which are distant from the large medical centres, to gather its fellows within its fold and to keep them abreast of all advances in the art and science of surgery.

Our College of Surgeons was designed to combine into one body the surgeons of Australia and New Zealand. This Australasian constitution would bring it into the world of international surgery, and make it powerful

<sup>1</sup> Read at the annual meeting of the Royal Australasian College of Surgeons, March, 1939.

enough to be influential in guiding the development and practice of the highly specialized and responsible profession of surgery.

The College is now, after twelve years, a body comprising 680 Fellows; its functions are purely scientific; it is intended primarily to fashion highly skilled surgical healers for the benefit of the community; its educational activities begin at that stage of post-graduateship where those of the universities cease.

The College has always been active in promoting clinical surgical research, in arranging hospital teaching and other hospital training facilities for candidates for its Fellowship. It has continued the surgical education of the Fellows within its fold by annual scientific meetings in the various parts of Australasia.

More recently an endowment by the late Gordon Craig has made it possible for the College to enter into a further sphere of usefulness in regard to the education of those wishing to become Fellows. This endowment has enabled the College to establish a limited number of educational scholarships which provide surgical educational facilities, possibilities of research, and overseas travel to surgical clinics and research centres.

Out of this endowment, too, it has also been able to provide for its Fellows a most valuable literary service. Feeling that there could be no better way of keeping its Fellows acquainted with all practices and advances in surgery than by making available to them all the wonderful resources of modern surgical literature, the College has established a lending library and a translation service of current surgical literature—the Gordon Craig Memorial Library. It is prepared to spend £1,000 a year on this service. Surgical current literature of the various countries of the world will be made available to Fellows in their homes in all parts of Australia and New Zealand. When required, full translations of foreign literature will be furnished free of charge. When faced with baffling surgical problems, a surgeon may enlist the services of the library staff, who will conduct a research in all the available literature on the subject.

Towards the end of the present year, in order perhaps to study the needs of others as well as those of its Fellows, the College will enter into a new sphere of surgical post-graduate activities, which will enable it to embark upon systematic post-graduate surgical instruction, in addition to that already arranged by clinical schools. It will become associated with the Prince Henry's Hospital in Melbourne, that very tall new building now rapidly rising in St. Kilda Road. The College will be entrusted with a section of the hospital for teaching purposes. The teaching staff may be chosen from specialists from any part of Australia and New Zealand. In this hospital post-graduates will enjoy all privileges in regard to daily bedside and operation room instruction. These hospital teaching facilities will be open to any member of the medical profession: the country surgeon will be able constantly to brush up his surgery, and the town surgeon, if he is not attached to a hospital, will always have hospital teaching and hospital experience at his disposal. This direct association of a College of Surgeons with a post-graduate teaching hospital will be unique in the world, and must ultimately raise the standard of surgery in this country to a high level.

In Sydney, too, the Prince Henry Hospital has been rebuilt and staffed for post-graduate teaching. With this hospital the College hopes to be able to make arrangements for surgical post-graduate facilities.

It is, perhaps, not to be wondered at that the ideals of our College are high and that the standard of its fellowship is ambitious. This is only natural, since the College came into existence in recent times, equipped with all the experiences of the older surgical colleges of Great Britain, and imbued with all the ambitions of a young college, arising in a young country and in an age renowned for its advanced outlook in scientific medicine and surgery.

But what may be wondered at is the effect—gradual and silent—which these ideals and standards have exercised in bringing surgical aid to the patient. I believe that, during the last decade, the standards of practical surgery in Australia and New Zealand have been rapidly improved, and that now they compare favourably with those of any country in the world. I would venture to say that it is not unduly presumptuous to think that the advent of an Australasian College of Surgeons may have been more or less responsible for such progress.

Before concluding my remarks, I should like to draw attention to one other happening of the past year, which, though not a direct concern of our College, nevertheless is of great importance to it. This event is the birth of a sister college—the Royal Australasian College of Physicians. It is with joy that we hail the advent of this body, whose path in medicine must necessarily run parallel with that of this college in surgery. I can assure the founders of this new college that it will be our earnest endeavour to cooperate, in every way possible, with them for the common good.

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In reply to Sir Alfred Webb-Johnson on his presentation to the College of books and a picture of Lister, Sir Hugh Devine said:

I should like now to express to you, Sir Alfred, the thanks of the Council and the Fellows of this College for the able and inspiring oration which you have delivered tonight. You have done much more than present "a posy of other men's flowers"; you have subtly infused into it your own life, your own personality, and the traditional outlook of your prototype—the master surgeons of England; you have sown for others to reap. Your oration will remain to all of us a memorable one.

And also I desire to offer to you our deepest gratitude for the magnificent gift of this beautiful portrait of Lord Lister. Last year, as I stood on the stairs of the Royal College of Surgeons of England admiring this historical picture, one of the most treasured possessions of the Royal College of Surgeons of England, I never dreamt that a replica of it—in my opinion a better picture than the original—would grace the portals of our own College of Surgeons hall. To the Fellows of our College this picture will serve as an affectionate remembrance of your visit, of yourself, and of the Royal College of Surgeons of England which you represent. The presentation of this picture to the College by Sir Alfred Webb-Johnson has come as a charming surprise, and I personally think it is one of the most delightful individual gestures which have been paid to our College.

Now I also wish to thank Sir Alfred for obtaining for us such a valuable work as that of the "Annals of the Barber Surgeons", and also for the other works which he has brought us; and I would beg him to give our thanks to Lord Ebbisham, the Chairman of the company. I should also be glad, too, if Sir Alfred would convey our thanks to Sir Cuthbert Wallace, and must also thank Sir Alfred for his gift of the writings of Sir Charles Bell, founder of the medical school of the Middlesex Hospital, a work which many old Australian and New Zealand students of Middlesex Hospital will treasure.

## THE GEORGE ADLINGTON SYME ORATION.<sup>1</sup>

### SURGERY IN ENGLAND IN THE MAKING.

By SIR ALFRED WEBB-JOHNSON,

*Surgeon to Her Majesty Queen Mary; Surgeon to the Middlesex Hospital;  
Member of the Council of the Royal College of Surgeons of England.*

You have done me a great and signal honour in asking me to deliver the George Adlington Syme Oration, and it has never fallen to my lot to receive an invitation which I valued as I do this.

"There is, one would say, and must ever remain while man has a tongue, a distinct province for speech as well as for writing and printing." I have therefore journeyed a long way in order to address you, and I appreciate that some of you have come a long way to do me the honour of being present. But, nowadays, since what Kipling called the "world-end habit" has been imposed upon the week-end habit, the case is not so remarkable.

Our thoughts tonight are naturally of George Adlington Syme, in whose memory this oration was founded. Not having known Syme, I can speak only from hearsay of his intellectual qualities and strength of character and of his gifts of leadership, but I see one of the fruits of his wise guidance in the flourishing condition of the Royal Australasian College of Surgeons today. Syme wrought mightily, as we do well to remember.

Improvement in the training of surgeons and their acquirement of a broad outlook on the science of medicine meant much to Syme. After most careful and anxious consideration the idea of a Royal Australasian College of Surgeons, with its hall-mark of a higher grade of efficiency, eventually appealed strongly to him. At first it was a mere suggestion, but Syme made it a practical proposition. He became convinced that the ideals he had in view would be brought nearer to attainment by the foundation of such a college, and that, from the resulting improvement in the practice of surgery, the people of Australasia would certainly benefit. He therefore threw himself wholeheartedly into the project, and the universal respect in which he was held throughout Australia and New Zealand enabled him to bring it to fruition. Most fittingly you elected him your first President.

It has been well said that "it is not the man who first says a thing, but it is he who says it so long, so loudly, and so clearly that he compels men to hear him—it is to him that the credit belongs".

"After brief life men die, and like runners in a race, hand on their torch to another." In the torch race which the Greeks ran to the Temple of Wisdom—symbolized in your coat-of-arms by the figure of Chiron—a prize was given not only to the one who first reached the goal, but to him also

<sup>1</sup> Delivered at the annual meeting of the Royal Australasian College of Surgeons, March, 1939.



who started with the torch aflame. To Syme belongs a triple prize. He was among those who first lighted the torch. He was among those who first carried it forward in the race, and passed it on burning with a brighter flame. He was also among those who first reached the goal.

Men love their Alma Mater for the honourable line of men whose names add lustre to her annals. The name of George Adlington Syme will always stand high on your roll of honour.

In your affectionate anxiety that Syme's labours should be remembered you must feel comforted by the reflection that you paid him due honour in his lifetime, that his work received recognition from his King, and that he went from you knowing that he was held in honour and affection by his friends, his profession, and his country.

#### CORPORATE RIGHTS.

It is bold to look forward, but it is wise sometimes to look backward. The past is always with us, never to be forgotten; and in the continual remembrance of a glorious past we find our noblest inspirations. Moreover, it is well to be familiar with the history of the past before setting our hands to moulding the future.

Tonight I invite you to look backward to see something of surgery in England in the making, and I will endeavour to point a moral and adorn a tale. It is a story of steady striving after the establishment of a corporate body with one great end in view—the advancement of surgery for the benefit of mankind—the object to which Syme devoted the best energies of his life.

The panorama which I propose to present to you is a passing show or pageant before a back-screen of English history, starting from the time of the Norman conquest.

Under the Norman kings and the early Plantagenets, in spite of the misrule of Rufus, the anarchy of Stephen's reign, and the attempt of John to throw off all restraint, it was made clear that there was to be a rule of law. The conditions were, therefore, favourable for an organization of local government to be set up, and the townships were selected as the ultimate units responsible for good order. Boroughs represented a higher state of organization than the ordinary towns, and were granted charters of incorporation. This was the beginning of corporate rights and privileges, with corporate responsibility.

The charters granted to some towns included the right to have merchant guilds, to which were given the privilege of excluding strangers or interlopers. The King, however, sometimes granted a similar privilege to other bodies more or less in opposition to the merchant guilds. These were the craft guilds, which were originally fraternities of alien handicraftsmen, but soon ceased to be restricted to alien craftsmen only and became officially incorporated in the national life.



The guild system, whether we use the term guild, or craft, or company, or mystery<sup>1</sup> to denote the organization binding men of similar trades together, became, with the one exception of the woollen trade, general all over England.

In these early Norman times there were two classes of men practising surgery. Each of them formed themselves into a craft guild, and these guilds became the cradle of the corporate life of surgery in England.

First there were the military surgeons, who formed the aristocracy of surgery, and accompanied the kings and nobles on the crusades. These men had some degree of learning and, if not themselves trained in one of the continental schools of medicine, were in touch with those who had such training. They had practice too—experience of wounds such as were caused in the cut and thrust of battle, which inspired some of the most stirring lines of your national poet, Adam Lindsay Gordon:

Riot of chargers, revel of blows,  
And fierce flush'd faces of fighting foes.

When men

Feasted and flirted, and fenced and fought.

Or to quote from his poem on Achilles, "Podas Okus":

Swift assault and sudden sally  
Underneath the Trojan wall;  
Charge, and countercharge, and rally,  
War-cry loud, and trumpet call;  
Doubtful strain of desperate battle,  
Cut and thrust and grapple fierce  
Swords that ring on shields that rattle,  
Blades that gash and darts that pierce.

This last quotation calls to mind the supporters of the coat-of-arms of the Royal College of Surgeons of England—Machaon and Podalirius, the two sons of Æsculapius—who were the chief medical officers attached to the Greek

forces during the battles against the Trojans.<sup>2</sup> The broken arrow in Machaon's hand represents the weapon he extracted from Menelaus's side, and, as the operation of removal was performed before Agamemnon and the bravest of the Achæan host, no wonder that the dart was broken in the process. Thus we are reminded that surgery has a very ancient history.

In addition to men of a higher class practising surgery there were men of a baser sort—the barbers—for, after various papal edicts had prohibited the priests from practising surgery, the

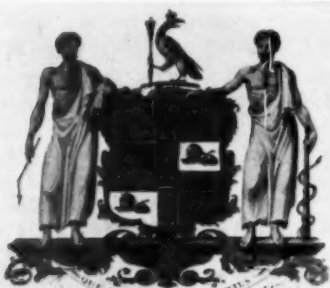
barbers, who had been the priests' assistants, proceeded to practise on their own.

#### STRUGGLE AND STRIFE.

The Guild of Surgeons was activated by the desire to improve the practice of surgery, to ensure that those who practised it should be qualified to do so,

<sup>1</sup> *Mestera* or *mestier*, mystery or mystery, signifies a trade, and is in no way connected with "*mysterium*" or "*secret*."

<sup>2</sup> See article by S. Wood (Assistant Librarian, Royal College of Surgeons), *The Lancet*, April 18 and 25, and May 2, 1931.



and to maintain a decent code of ethics among them. Their numbers were small, and they were often away at the wars.

The barbers, on the other hand, were stay-at-homes. Their numbers were large and they had a good organization. They had the ear of the people; and the city magnates, when submitting to their barbery, had no escape from their tongues. Even today you know how you may be at the mercy of a too loquacious barber!

The Barbers' Guild secured vested rights, and "man is stubborn his rights to yield". The members of the Surgeons' Guild had, therefore, to fight against odds. They struggled uphill, strong in their faith that the position would "yield to toil and time", and public records show how they continually tried to obtain control of those practising surgery. In a long drawn out struggle "two things stand like stone"—the same ideals as Syme's—their determination to improve the science and art of surgery, and their anxiety for the public weal.

These are the men who were our forbears; and, as Sir James Paget said, "The surgeons from whom we trace our descent were not barbers", and "there is nothing discreditable in our pedigree".

Unfortunately, whenever the Surgeons' Guild secured the right to exercise control over the practice of surgery, their success was "bitterly brief". The barbers always had enough influence to obtain ordinances affirming or reaffirming their right to practise surgery. Even an alliance with the physicians, in the reign of Henry VI, and the formation of a Conjoint Faculty of Physicians and Surgeons (the first conjoint board), with power to examine all who desired to practise surgery in London, failed to prevent the barbers from getting their privileges confirmed.

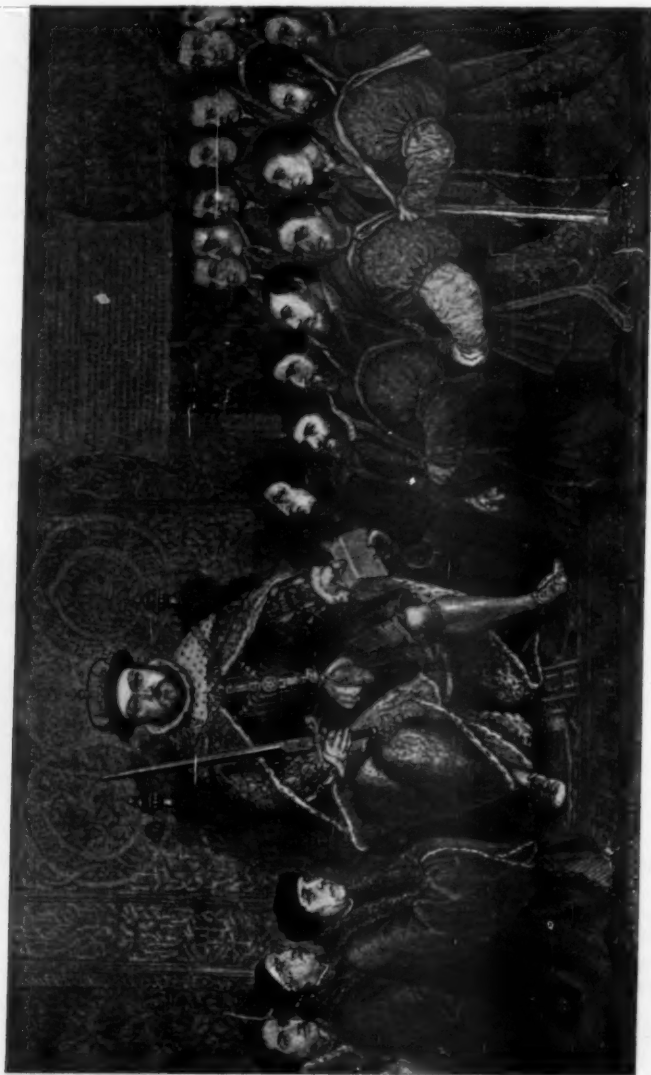
Eventually the Surgeons' Guild was completely checkmated by the grant of a Royal charter to the Barbers' Guild by the youthful King Edward IV in the first year of his reign. It is clear that at this time the growing numbers and increasing civic power of the Barbers' Guild had attracted many surgeons of position and reputation into its fold, for the first senior warden of the incorporated company was sergeant-surgeon to the King.

Although the Surgeons' Guild continued as a separate body for nigh on a century, there was no longer a struggle between two rival fraternities, but a constant urge among the better surgeons, whether in the Surgeons' Guild or the Barbers' Company, for the improvement of the practice of surgery. The leading surgeons of the two fraternities came closer and closer, and, in the reign of Henry VII, were parties to a voluntary alliance between the two bodies.

This first chapter in the struggle, which provides a striking example of patient perseverance and peaceful penetration, closed with the union of the two bodies in 1540 by act of Parliament in the reign of Henry VIII. The union was between the Guild of Surgeons and another body of surgeons who



Seal of the charter granted by Edward IV.



From Holbein's picture in Barbers' Hall.

were incorporated and practised under the name of "barbers", but in conjunction with actual working barbers. To us the association seems grotesque, but Paget wrote: "That which was called a union was really only an official junction." One can hardly imagine that the better surgeons were pleased with their house-mates, but, whatever the feelings of individuals may have been, it is evident that the association was considered wise and expedient by those who desired the improvement of surgical practice.

In point of fact, as the alliance with the physicians had lapsed, and as the surgeons themselves were divided between the two fraternities, and as the Barbers' Company was unassailably entrenched behind a Royal charter, it was by union alone that the better surgeons could attain their ends.

Every picture tells a story, and none more clearly than Holbein's masterpiece, which commemorates the union and emphasizes that it had the support of the best medical men of the time, physicians as well as surgeons. It shows King Henry VIII, supported on his right by his physicians and apothecary, handing their authority, symbolized as a charter, but really the *Act of Union*, to the master of the surgeons and barbers on his left. Dr. John Chambré, on the King's immediate right, was his personal physician and intimate friend. He attended Jane Seymour when Edward VI was born, and was also in attendance on Anne Boleyn at the birth of Elizabeth.

The middle of the three figures on the King's right is another of his physicians, Dr. William Butts, whose historic intervention on behalf of Archbishop Cranmer is immortalized in a scene with the King in Shakespeare's "Henry VIII":

Dr. Butts:	I'll show your Grace the strangest sight,—	
King Henry:		What's that, Butts?
Dr. Butts:	I think your highness saw this many a day.	
King Henry:	Body o' me, where is it?	
Dr. Butts:		There, my lord:
	The high promotion of his Grace of Canterbury;	
	Who holds his State at door, 'mongst pursuivants,	
	Pages, and foot-boys.	
King Henry:		Ha! 'tis he, indeed:
	Is this the honour they do one another?	
	'Tis well there's one above 'em yet. I had thought	
	They had parted so much honesty among 'em,—	
	At least, good manners,—as not thus to suffer	
	A man of his place, and so near our favour,	
	To dance attendance on their lordships' pleasures,	
	And at the door too, like a post with packets.	
	By holy Mary, Butts, there's knavery:	
	Let 'em alone, and draw the curtain close;	
	We shall hear more anon.	

On the left of the King is Thomas Vicary, his sergeant-surgeon, one time master of the barbers, and first master of the united company—a great figure at Saint Bartholomew's Hospital, a wise and honest gentleman.

At the time of the fire of London the Holbein picture was saved, though Pepys writes of it as being damaged. The reason for this, however, may have been that he had an idea of buying it for £200, while admitting that it was worth £1,000.

During the period before the union no doubt there were many surgeons of note, but after the lapse of half a millennium only a few stand out against the background of history.

One was Master John of Arderne, a contemporary of Chaucer. He belonged to the courtly time of Edward III, and was a friend of the King and of the Black Prince. His writings are of some interest to us today, for he taught that wounds should be dressed as seldom as possible. He formulated some curious rules of conduct, such as the advice not to "stare too hard at the lady or her daughters, or at other fair women in great men's houses"; but he went on to enjoin: "Bear yourself according to the social position of the patient, to some reverently, to all courteously."



The representation of Holbein's picture which hangs in the Entrance Hall of the Royal College of Surgeons of England—considered by some authorities to be made up of original sketches by Holbein from the life, by others thought to be a copy, made by order of James I. There are many differences between this picture and the one in Barbers' Hall (see C. J. S. Thompson, *The British Medical Journal*, 1934, page 651).

John of Arderne worked to promote the art of practical surgery by his teaching and writing, but he was not particularly concerned with the improvement of the corporate status of his profession.

Of a different stamp was the sturdy figure of Thomas Morstede, surgeon to Henry IV, V and VI. He crossed the channel to serve with Henry V in the campaign which ended so successfully at Agincourt. Morstede strove strenuously to make surgery a profession, and took a leading part in the formation of the Conjoint Faculty of Medicine and Surgery. He was a man after Syme's own heart.

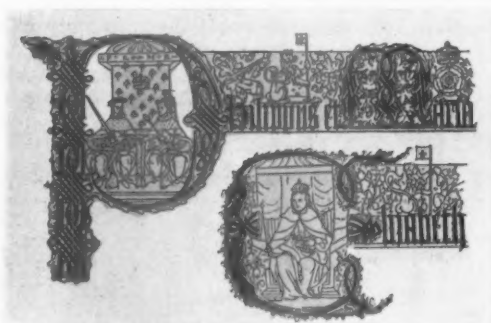
#### LE MARIAGE DE CONVENANCE.

The fantastic association of surgeons and barbers lasted for a couple of centuries, in spite of continual strife between the ill-mated sections of members, and in spite of a determined effort to effect a separation by petition to Charles II. During the two centuries charters were granted by several sovereigns.

The surgeons, in addition to acquiring municipal and corporate advantages, shared the use of the splendid Barbers' Hall. Teaching assumed



a prominent place in the activities of the company, and, in the reign of Charles I, a theatre, designed by Inigo Jones, was added to the hall and became one of the sights of London.



Headings of charters granted by Philip and Mary, and Elizabeth.



Seal of the charter granted by Charles I.

By the time of William and Mary, teaching was being carried on systematically at the two hospitals then existing in London—Saint Thomas's and Saint Bartholomew's. The governors of Saint Thomas's recognized the right of the surgeons to take pupils, but ordained that "none shall have more than 3 cubbs at one time". The company, however, had exclusive rights in regard to teaching, and complaints were made "against breeding soe many illiterate and unskilful pretenders to Chyrurgery at St. Thomas's Hospitall". At a later period the company took disciplinary action against those who taught anatomy and dissected in their own houses. The opposition of the company to these developments provides an interesting manifestation of the unthinking defence of exclusive rights, for surgery was being established on a sure scientific basis by the surgeons who were teaching in the hospitals and in their private classes.

During the Tudor and Stuart periods the country swarmed with quacks, and the most outspoken surgeon of Elizabeth's reign, William Clowes, vividly attacked the abuse in the following terms:

Yea, nowadays it is apparent to see how Tinkers, Tooth-drawers, Pedlars, Ostlers, Carters, Porters, Horse-gelders and Horse-leeches, Idiots, Apple-squires, Broom-men, Bawds, Witches, Conjurors, Sooth-sayers and Sow-gelders, Rogues, Rat-catchers, Runagates, and Proctors of Spittle-houses with such other-like rotten and stinking weeds which do in town and country without order, honesty or skill daily abuse both phisic and chirurgery, having no more perseverance, reason or knowledge in this



Theatre at Barbers' Hall.

art than hath a goose, but a certain blind practice without wisdom or judgement and most commonly useth one remedy for all diseases and one way of curing to all persons both old and young, men, women and children, which is as possible to be performed or to be true as for a shoemaker with one last to make a shoe to fit everyman's foot and this is one principal cause that so many perish.

Extracts from the proceedings of the court of the company shed interesting sidelights on some of their troubles; for example:

Here was a complaint against Willm. More by one Henry Dobbins for that he did not cure his sonne but made him worse. William More was ordered, on account of his ignorance, to meddle no more in surgery.

Hewe Placket was rebuked for takeing upon him to heale a patient who ys deade and commaundement given that he shall meddle no more in surgerie.

The examinations were generally conducted with great dignity and ceremony, but in the records of some incidents there is much to amuse:

Peregrine Compton. Rejected being fuddled & not answering a question.

Wm. Ogilby. Rejected & said very saucily it should be the last time.

James Ripoult a Frenchman was called in but not speaking English nor being naturalized the Court did not think it proper to examine him.

William Miles recommended by Lord Torrington & examined but seeming to know nothing of Surgery was rejected.

Here is an interesting record of opposition to the encroachments of the physicians, who regarded surgeons as mere craftsmen and objected to them taking complete charge of their patients:

Whereas there hath been an abuse offered to Mr fenton Bynns by Doctr Goodall for giveing internall medicines in a case of Surgery, Ordered that if the College of Phisitions doe arrest Mr Bynns that he shall bee defended at the cost of the Company for the fact now menconed in Court.

Disciplinary measures were often taken, thus:

This daye it is ordered that John Urvey shalbe committed to the Compter<sup>1</sup> for not p'forminge his payments to Henry Bracy accordinge to the orders of this howse.

The securing of the bodies of malefactors, to four of which the company was entitled each year for purposes of dissection, was sometimes a matter of great difficulty owing to obstruction by the people at the place of execution, and there are many unpleasant incidents on record. But there are also instances of the method of execution not being efficient. "One supposedly executed man had not been five minutes at the hall before 'life appeared in him'. The Sheriffs ordered him back to Newgate where he recovered in 3 or 4 days sufficient to converse and eat and dined very freely, but never could give any reasonable account of what had passed." It is gratifying to note that the victim of this tragic occurrence obtained a reprieve.

As Kipling wrote:

Wonderful little, when all is said,  
Wonderful little our fathers knew.  
Half their remedies cured you dead—  
Most of their teaching was quite untrue—  
Whence enormous and manifold  
Errors were made by our fathers of old.

Yet when the sickness was sore in the land,  
And neither planet nor herb assuaged,  
They took their lives in their lancet-hand  
And, oh, what a wonderful war they waged!  
None too learned, but nobly bold  
Into the fight went our fathers of old.

<sup>1</sup>The Compter was a superior house of detention in Wood Street, Cheapside.

## BILL OF DIVORCEMENT.

Eventually the long-standing animosity between the surgeons and barbers reached its inevitable climax, and in 1745, the year the Pretender landed in Scotland, the unhappy partnership was dissolved and the surgeons were incorporated as a separate company by act of Parliament of George II. It was a good augury for the future intentions of the new Surgeons' Company that the only property claimed by the surgeons was the money given by Edward Arris and by John Gale for the endowment of lectures, which are still delivered annually at the Royal College of Surgeons.

The period of the union had been one of great development. The shackles of mediævalism had been cast off, the printing press had arrived, and books had become available so that all who cared to run might read. The old teachings had been raked over, the dust of centuries wiped from them, and the dogmatic statements challenged by the only true tests—experiment, research and trial.

The real foundations for surgical development were laid by the great anatomists in the sixteenth



Harvey demonstrating the circulation of the blood to Charles I. From the painting by Robert Hannah.

century. The reveille was sounded by Vesalius, a Belgian of Scottish extraction on his mother's side.

The awakening was hailed by Harvey, the greatest name in British medicine, and one of the greatest in the history of the world.

Under the Stuarts another notable figure in anatomy and medicine was Thomas Willis. We know him for the "circle of Willis", but he was the first to describe *diabetes mellitus*, and he gave such an accurate description of an epidemic which prevailed among King Charles's forces encamped at Oxford that we can recognize it today as one of the first accounts of an outbreak of typhoid fever. It is interesting to note that some of the illustrations of his dissections of the brain were drawn by Christopher Wren.

There were several surgeons of eminence during this time. One of these was Thomas Gale. He was often away at the wars, and was with Henry VIII at Montrenil, and at the battle of St. Quentin with Philip II of Spain when Ambroise Paré, whom he greatly admired, was dressing the wounds inflicted on the French troops by English soldiers. The outspoken William Clowes



From Christopher Wren's drawing of one of Willis's dissections.

has already been mentioned. He was sergeant-surgeon to James I, and his unguarded tongue, as one would expect, often led him into trouble.

An outstanding figure of James I's time was John Woodall, famous for having inferred that the juice of limes was a preventive of scurvy. He was the leader of the surgeons in their fight against the physicians.

The greatest English surgeon of the seventeenth century was Richard Wiseman, generally regarded as the father of British surgery. He may be said definitely to have raised the status of surgery to that of a profession. He was a scientific man, a man of culture and a scholar.

The most famous surgeon at the time of the separation from the barbers was William Cheselden. He is the real link with modern surgery. He was a great anatomist and a brilliant operator, removing stone from the bladder in fifty-four seconds. Cheselden and John Ranby, sergeant-surgeon to George II, were the main promoters of the movement for separation. Ranby gave a fine silver cup to commemorate the foundation of the Surgeons' Company. Although he had held no office in the united company, he was made the first master, largely, it is said, out of gratitude for his good offices with the King, with whom he had great influence.

It is evident from the writings of the time, one of the most brilliant literary periods in English history, that the surgeons of the day consorted much with the leading men of letters. Fielding introduced Ranby into his famous "History of Tom Jones" as "Mr. R——, Sergeant-Surgeon to the King, and having the first character in his profession"; and Cheselden is mentioned in the first epistle of Pope's "Imitations of Horace":

Late as it is, I put myself to School,  
And feel some comfort, not to be a fool.  
Weak though I am of limb, and short of sight,  
Far from a lynx, and not a giant quite;  
I'll do what Mead and Cheselden advise,  
To keep these limbs, and to preserve these eyes.  
Not to go back, is somewhat to advance,  
And men must walk at least before they dance.

#### THIS FREEDOM.

And so farewell to the Barbers' Company, set on the way to becoming what it now is—a picturesque survival of an older time, adding dignity to the city, remarkable for its benevolence and hospitality, but no longer an arbiter of trade or a centre of independent authority.



The Surgeons' Hall in the Old Bailey, 1751-1796.

And hail to the Surgeons' Company!—free to fulfil its appointed destiny as the headquarters of English surgery—nay, of British surgery—for, with her sister colleges, the Royal College of Surgeons of England, which succeeded the Surgeons' Company, has an imperial value and significance. And now in addition to an

imperial significance, she has a definite imperial link with the Royal College of Australasia. It is our earnest hope and endeavour to keep live and firm the ties which hold us together.

The company built a hall in the Old Bailey, and the members of the court showed their determination to put teaching in the forefront of their activities by a resolution passed unanimously "that a theatre be the first part of the new intended building". The theatre was for the teaching of anatomy and for lectures on surgery, and the first masters of anatomy were men famous in the history of British surgery—Percivall Pott and William Hunter.

It was not long, however, before private schools of anatomy were developed, for the new company did not forbid dissection elsewhere than at its hall. At a later date teaching passed to the universities and medical schools.

The most famous of the private schools was that built by William Hunter in Great Windmill Street at the top of the Haymarket. The house still stands, and now forms the dressing-rooms of the Lyric Theatre, the present stage door being where the bodies were carried in for dissection.



William Hunter's house and school of anatomy in Great Windmill Street.

Unfortunately, the governors of the company did not adhere strictly to the regulations laid down by act of Parliament, and found that, owing to irregularities of procedure, their powers had lapsed. A bill to obtain a new *Act of Incorporation* was defeated in the House of Lords, mainly owing to the opposition of Lord Thurlow, who is reported to have observed, "There's no more science in surgery than in butchery", to which Surgeon-General Gunning, one of the chief promoters of the bill, promptly replied, "Then, my Lord, I heartily pray that your Lordship may break your leg, and have only a butcher to set it, and then you'll find the difference between butchery and surgery".

#### THE ROYAL COLLEGE OF SURGEONS.

It was decided eventually to proceed by petition to the Crown, and in 1800 the Royal College of Surgeons was established by Royal charter of George III. At long last—after over five centuries of effort—the college was in being, three hundred years after the Royal College of Physicians. But it is worthy of note that the long delay was caused in the first place by the surgeons being divided between two fraternities and authority passing into the wrong hands, in the second place by errors of procedure, and in the third place by the physicians' attitude in treating the surgeons as mere craftsmen.

Oh, that the alliance between the physicians and surgeons of Henry VI's reign had been maintained!—instead of lapsing for nearly four hundred years, when the Conjoint Board was established. Medicine suffered as well as surgery, for as Osler said, when speaking of John Hunter as the greatest medical thinker of modern times: "He was as a voice crying in the wilderness



The heading and the two sides of the seal on the charter granted by George III.

to the speculative, theoretical physicians of his day." In Harvey's time, likewise, the physicians were out of touch with practical surgery, and Francis Bacon described them as "seeing things from afar off, as if from a high tower".

Meantime, Parliament had purchased John Hunter's collection for the nation. The collection was entrusted to the Company of Surgeons, and Parliament made large contributions towards the extension of the new buildings which had been erected in Lincoln's Inn Fields.



The magnificent collection of John Hunter contained specimens from all parts of the then known world. It is an imperishable memorial of his industry. It formed the nucleus of the future greatness of the college, and will always be its proudest possession. The museum is continually being added to, and is a true staff-college of learning. It is the most wonderful museum of its kind in the world, a temple of biology and pathology. Hunter might have said with Horace: "I shall not wholly die. What's best of me shall 'scape the tomb."

The library, which was instituted at the same time, has grown steadily and now provides a fully equipped chart-room for those who embark on surgery—for "to study the phenomena of disease without books is to sail an uncharted sea".



The Surgeons' Hall in Lincoln's Inn Fields (from print published 1814).



Kangaroo's skull, from the Hunterian collection, brought from Australia ("New Holland") by Sir Joseph Banks when with Captain Cook's Expedition, 1768-71.<sup>1</sup>

As teaching formed a less prominent part of the activities of the college, experimental research assumed a more and more important place. Research has been carried on continuously ever since the opening of the buildings in Lincoln's Inn Fields; but a tremendous stimulus was given to this essential function of the college by the provision of the research farm at Downe, the gift of Sir Buckston Browne, the greatest benefactor of the college since

Sir Erasmus Wilson ("The Obelisk", as he was called after he brought "Cleopatra's Needle" to London).

Two years ago magnificent laboratory facilities were provided at Lincoln's Inn Fields by the Bernhard Baron Trustees, and the college now provides not only the inspiration, but every help for those who wish to embark on sur-



The Buckston Browne Research Farm.

<sup>1</sup> See Hunter's "Essays and Observations on Natural History", Volume II, page 250. "This animal, probably from its size, was the principal one taken notice of in the island; and the only parts at first brought home were some skins and skulls; and I was favoured with one of the skulls from Sir Joseph Banks". No. 1732. Hunterian Osteological Series.

gical research. The men will come to shed light on many problems which are dark today, and great men are of more importance to science than great laboratories. We may repeat the prayer of Kipling:

Send here the bold, the seekers of the way—  
The passionless, the unshakeable of soul,  
Who serve the inmost mysteries of man's clay,  
And ask no more than leave to make them whole.

In spite of the development of the medical schools and the rise of the universities, surgeons in England today feel just as keenly, if not more keenly, the need for a headquarters representative of British surgery. The need for such an authoritative body is evidently felt in other countries also, for we see the creation of colleges of surgeons in other parts of the Empire and the world.



The Royal College of Surgeons of England.

There were many famous surgeons connected with the company, and with the Royal College in its early days, and it would be impossible to pay tribute to them all. Many names are to be remembered with gratitude for their services to the college and to the profession of surgery, but their lights are eclipsed by the brilliance shed by those who revolutionized the science and practice of surgery.

Percivall Pott, whose name is attached to many surgical conditions, was one of the founders of modern surgery, the first representative of the scientific and pathological surgeon; Abernethy—a pupil of Pott and also of John Hunter, whom he worshipped—brusque of manner, the subject of endless tales—founded the medical school at Saint Bartholomew's Hospital; Astley Cooper—one of the most popular men of his day—greatly daring, even venturing to ligate the aorta, but overcome with anxiety when he had to remove a small cyst from his Sovereign's head—strikingly handsome, which led Abernethy to indulge in the gibe that "he owed his success in life more to the outside of his head than the inside"—founded the medical school at Guy's Hospital; Charles Bell—as the discoverer of the double function of the nerves, ranked in his day on the Continent as greater than Harvey—exquisite artist, as shown by his drawings in "The Anatomy of Expression"—founded the Middlesex Hospital medical school; Benjamin Brodie, of "Brodie's abscess"—supported Astley Cooper at the minor operation on George IV—famous for his treatise on "Diseases of the Joints"—responsible for the institution of the Fellow-



"Happy Childhood", by Charles Bell.

ship of the Royal College of Surgeons, the high surgical diploma which contributes so largely to the prestige of the college; Liston, who carried operative skill and dexterity to its highest development; Hilton—"Anatomical John"—whose Arris and Gale lectures on "Rest and Pain" have become a surgical classic—known also for Hilton's law and Hilton's method of opening



The portrait of John Hunter, by Reynolds, which hangs in the Council Room of the Royal College of Surgeons of England. The story that Reynolds caught Hunter in a pensive mood when he had nearly completed his picture, turned the canvas upside down and painted the finished portrait over his first attempt, was disproved when the picture was examined under X rays last year.

abscesses; Paget—exemplar in the public eye of all that is great and noble in our profession—a great surgical pathologist—silver-tongued orator, the greatest of his day, even surpassing Gladstone.

These and a host of others added lustre to their time. The achievements of some of them were of the order of deeds that men write upon stone. But

all sink into insignificance in the light of the revolution effected in surgery by the genius of first Hunter and then Lister. After their work inventions and developments followed each other fast as falling leaves.

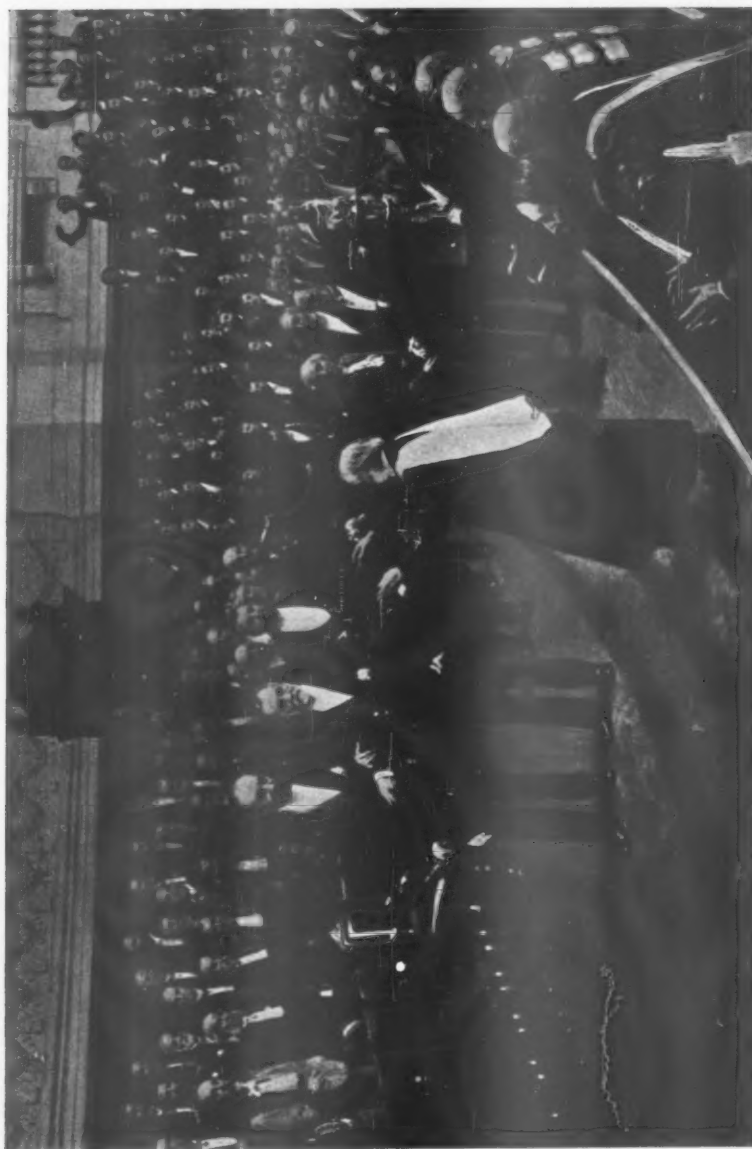
Hunter laid the foundations of scientific surgery, treated diseased action as a department of biology, and founded physiological pathology. So long as



The portrait of Lister, by Oules, which hangs on the staircase of the Royal College of Surgeons of England.

surgery continues, Hunter's influence will be felt. He gave us the inspiring watchword: "Do not think, try the experiment."

But the history of surgery, and indeed of human suffering, will always be divided into the times before and the times after the coming of Lister. With Pasteur he shares the chief honour in the great victory over disease, and as the American Ambassador, Mr. Bayard, said when addressing Lister at a Royal Society banquet: "It is not a profession, it is not a nation, it is humanity itself which, with uncovered head, salutes you."



Lister greeting Pasteur at the Sorbonne on the occasion of Pasteur's seventieth birthday, December 27, 1892. From a photograph, in the possession of the Lister Institute, of the painting by Rixens.

The story of the conquest of the hosts of death is a tale of heroism equal to that in any other field of human endeavour. Pasteur's biographer gives a vivid description of the grey-bearded furrowed old man sucking saliva through a glass tube from the jaws of a mad dog. We do well also to remember the humbler partners in the fight, such as the men who held the frantic animal while Pasteur collected the specimen he required; and such as the shepherd-boy Jupille, aged fourteen years, who, in protecting some other children from a mad dog, bravely struggled with it and tied up its mouth with his whip. He then stunned the dog with his sabot, dragged it to a stream and held it under water until he was sure it was dead. Jupille was bitten in both hands, but was inoculated by Pasteur—the second patient to be so protected—and was saved from hydrophobia.



Truffot's statue of the shepherd-boy Jupille.

A signed portrait of Pasteur and a copy of Truffot's fine statue of Jupille, which stands in front of the Pasteur Institute in Paris, were counted by Sir John Bland-Sutton, the surgeon-biologist of our generation, as among his most inspiring and most precious possessions. The portrait was given by Pasteur to Ellen Cooper, daughter of Sir Daniel Cooper, the first Speaker of the Legislative Assembly of New South Wales, and later Agent-General in London. Miss Cooper gave the portrait to Sir John Bland-Sutton, who, on his death, entrusted it to me. The portrait of Pasteur and the statue of Jupille will one day adorn the Royal College of Surgeons of England.

Surgery was now medicine—and English medicine was leading the world. Osler went so far as to say: "The modern history of the art of medicine could almost be written in its fullness from the records of the Anglo-Saxon race. We can claim every practical advance of the very first rank—vaccination, anaesthesia, preventive medicine and antiseptic surgery, the 'captain jewels in the carcanet' of the profession, beside which can be placed no others of equal lustre."

Such is our history—and, indeed, your history. And now you have already made history of your own. We are heirs to a great inheritance, and many have sacrificed themselves in the struggle as their passion drove them, but, in the words of Lindsay Gordon:

Some must sow for others to reap,  
And some must frown for others to grin,  
And some must watch that others may sleep,  
And some must lose that others may win.

Sometimes we may be ready to condemn those who have clogged the wheels of progress, but "*de mortuis, nisi bonum, nil*".

And when we have lavished our praise on famous men, let us bear in mind that there are many whose works live after them, though their names may not.



Let us remember with Kipling that:

When through the Gates of Stress and Strain  
Comes forth the vast Event—  
The simple, sheer, sufficing, sane  
Result of labour spent—  
They that have wrought the end unthought  
Be neither saint nor sage,  
But only men who did the work  
For which they drew the wage.<sup>1</sup>

From this history of surgery in England in the making we may learn several things. I think you will appreciate more and more, as time goes on, the value of having a headquarters of surgery in Australasia. To carry out your ideas you need authority, and that a Royal charter will give you. To retain your authority you must adhere most carefully to your charter and by-laws. Charters may have to be amended to meet new requirements and new conditions, as



The Royal Australasian College of Surgeons.



George the Fourth

they have been several times in the history of the Royal College of Surgeons of England. This may be irksome, but, with growing experience, it proves to be a restraint which prevents hasty decisions and avoids

changes which time may prove to be undesirable.



Headings of charters granted by George IV and Queen Victoria.

You must work in collaboration with your sister College of Physicians; and must always remember that throughout the ages a golden truth is blazoned—the path of progress is by experiment, research and trial.

You are unfettered by tradition, but share a glorious inheritance. Whatever your difficulties, it is clear to one who visits you for the first time, and who will be followed by others who will wish to keep strong the links which bind us together—it is clear that you

<sup>1</sup> From "The Wage Slaves" out of "The Five Nations", the manuscript of which was given by Mrs. Rudyard Kipling to the National Library at Canberra.

are making for yourselves—indeed, that you have made—a reputation in the world which is equal to that of the great institutions whose annals are linked with our national history and whose glories are the pride of every Britisher. Many have worked hard to bring about this achievement, many more will follow.

The distance you have travelled in the short space of twelve years would have gladdened the heart of your first President, George Adlington Syme, in whose honour we meet here today. As we contemplate the splendid success of his last great creative work we do well to bear in mind that it is not for his achievements alone that we desire to honour Syme's memory, but for the high example he set of devoted service to his country and the public weal.

At the end of a long life of public service Lord Balfour said: "By so much as we give of ourselves, our labour and our loyalty to things which have immortality, by so much shall we increase the joy of life and remove the sting from death." For centuries after we have gone the Royal Australasian College of Surgeons will continue, and it should increase the joy of life for us to work in its service and to endeavour to make our contribution to its present and future greatness.

#### Presentation of Books and Picture of Lister.

After concluding his George Adlington Syme Oration, Sir Alfred Webb-Johnson said:

Mr. President: I have endeavoured to make you feel something of the atmosphere and tradition of the Royal College of Surgeons of England.

"I have gathered a posie of other men's flowers, and nothing but the thread which binds them is mine own." To adorn my tale I have thought it appropriate to quote liberally from your national poet, Adam Lindsay Gordon, and from our poet of Empire, Rudyard Kipling.

My main sources of information have been Sidney Young's "Annals of the Barber Surgeons" and South's "Craft of Surgery", edited by our surgical historian, Sir D'Arcy Power, on many of whose other writings I have drawn freely. Sidney Young's book is not easy to come by, but there was still one copy in the possession of the publishers, and I bring it to you as a gift from the Chairman of the company, Lord Ebbisham, one-time Lord Mayor of London. I have also been able to secure for you a copy of South's "Craft of Surgery". And lastly I bring you the volume prepared by Sir William MacCormac to celebrate the centenary of the Royal College of Surgeons of England. The book contains short biographies of the masters and presidents of the College up to the year 1900. This particular copy was presented by Sir William MacCormac to Sir Cuthbert Wallace, who sends it by me as a gift to you.

From a feeling of filial piety I have also brought you some of the writings of Sir Charles Bell, founder of the medical school of the Middlesex Hospital, which I have the honour to serve.

"Happiness is neither art, nor history, nor philosophy. It is, or it is not, but when it is, it is sufficient." You have given me great happiness by your invitation to address you, by the way you have received me, by the honour you have done me by making me an Honorary Fellow of your College, and by the opportunity you have given me of renewing many old friendships and of making many new ones.

To keep the memory of this occasion, which will always be precious to me, I ask you to accept from your youngest Fellow this portrait of Lister, by Francis E. Hodge, after the picture of W. W. Oulss, R.A., which hangs on the staircase of the Royal College of Surgeons of England.

## EARLY SYMPTOMATOLOGY AND CONSERVATIVE TREATMENT OF BLADDER-NECK OBSTRUCTIONS.<sup>1</sup>

By R. J. SILVERTON,  
*Sydney.*

THOUGH the term "prostatism" has come to acquire a general significance, connoting certain syndromes associated with bladder-neck obstruction, the title "prostatic obstruction" which denominates this symposium is of too restricted a significance.

It will be found that approximately one-fifth of all non-malignant obstructions at the bladder neck or in the posterior portion of the urethra do not involve the prostate gland itself. These are incorporated in the term *prostatisme sans prostate*, long used by French urologists to denote certain types of muscular, glandular or connective tissue hyperplasia at the bladder neck, fibrosis of the internal meatus or even of the sphincter following inflammatory processes, and more recently simple hypertonicity of the internal sphincter muscle itself.

The other four-fifths of innocent bladder-neck obstructions are comprised by more or less general prostatic adenomatosis, while about one-tenth of all bladder-neck obstructions are due to clinically obvious carcinoma of the prostate. These figures are based solely on my own personal experience.

I now desire to draw special attention to certain neglected or overlooked aspects of early symptomatology, with the object of securing early diagnosis in all forms of prostatism, so that perurethral conservative methods of treatment may be applied. As a corollary, or more definitely as a consequent benefit, we may expect to see carcinoma of the prostate in much earlier stages than we do at present. Therefore, instead of satisfying ourselves with palliative treatment in these malignant conditions, we may in future have more frequent opportunities of attempting cure by wide excision or by radium and radiation therapy.

It has long been an accepted idea that the earliest symptom of adenoma of the prostate is due to irritation at the bladder neck, and appears in the form of increased frequency of urination. The most important thought which I desire to contribute to this symposium is that a definite, but more subtle, symptom precedes the classical one of increased frequency of urination. This symptom I shall refer to as "restriction of the stream", a term which I hope will distinguish it definitely from the later symptom of frank difficulty in urination. The latter is usually the subject of voluntary complaint, whereas the lesser degrees of stream restriction are hardly ever complained of spontaneously.

It has commonly been stated in the past that prostatic hyperplasia is, unfortunately, often insidious in its development, so that a sudden retention

<sup>1</sup> Delivered on the occasion of the symposium on prostatic obstruction, held on March 24, 1938, during the eleventh annual general meeting.

may be the first symptom. In such cases a fairly large adenoma is usually found. If the patient is questioned carefully, a history of restriction of the stream can nearly always be elicited, even though at first sight the sudden retention was the primary sign of disease.

My object today is to drive home the fact that restriction of the stream is only seldom the subject of voluntary complaint. It does not inconvenience the patient like nocturnal or severe diurnal frequency, which so easily becomes a nuisance or even a disability. Frank difficulty, too, soon causes concern to the patient; but a slight restriction of the stream will pass unnoticed or, even if noticed, rarely causes him to worry.

Certain varieties of *prostatisme sans prostate* fall into line symptomatically with adenoma of the prostate; that is, increased frequency of micturition dominates the clinical picture during the earlier stages of the developed disease. Other varieties, such as contracture of the bladder neck, fall into line symptomatically with carcinoma of the prostate, in that difficulty of urination is the outstanding symptom. Here again, however, frank difficulty is by no means the earliest symptom. If one takes the trouble to question the patient carefully, it will almost invariably be found that a history of gradually increasing degrees of restriction of the stream can be elicited.

I therefore urge that in all cases of prostatism, whether prostatic adenoma, prostatic carcinoma or *prostatisme sans prostate*, we should turn our attention to the study of the urinary stream as the significant indicator of the very beginning of the morbid process. I shall now discuss this significant indicator under two headings.

#### FORCE OF THE STREAM.

It will take many years of dissemination of knowledge among the public by the usual indirect means before male patients begin to complain voluntarily of diminution in the force of the stream, but the cooperation of general practitioners will help enormously. In matters of health generally, the practice of advising men and women of middle-age or older to report for a general overhaul once a year is to be commended. In the case of middle-aged and older men, questioning as to increased frequency or difficulty in urination, and, above all, as to restriction of the stream, should be included in the routine. Men who are somewhere about fifty, somewhat younger or somewhat older, should not lose such tone in the vesical detrusor that the power of projection of the stream is noticeably diminished. Unfortunately, as with the symptom of increased frequency, restriction of the stream is simply put down to the onset of old age, and therefore dismissed from the mind as of no significance.

Nevertheless, I have noticed, especially since the public has begun to hear of conservative methods of treatment, that a greater number of patients are appearing earlier for diagnosis, and in some cases at least it seems to be understood by them that all is not well if the power of projection and the diameter of the stream are not all they should be. One has only to take the case of a man, let us say, of fifty to sixty, who has had a minor obstructive lesion removed perurethrally, and to witness his amazement at the forceful and wide stream he acquires, to realize that restriction of the stream is due, as a rule, to definite obstruction and not to ageing of the detrusor.

The symptom of restriction of the stream will usually have to be elicited by very careful questioning, for the memory of many people is poor about such matters. The best method is to ask the patient to compare the present force and diameter, if possible, with that of ten, twenty or thirty years earlier.

On the contrary, some men remember their power in this regard right back to their schooldays, but do not attach any significance to the gradual loss of such power, putting it down to the effect of age. Yet, after removal of the obstruction, they are amazed at the change. Such a result should not be surprising, however, when we realize that the general muscular power in healthy middle-aged men is unimpaired.

Since becoming interested in this subject of early symptomatology, I have taken note of the endoscopic state of the bladder neck and posterior portion of the urethra in male patients who are undergoing cystoscopy for upper urinary tract or bladder cavity lesions. To all patients showing a normal outlet, I have put questions as to the force and diameter of the stream, and have invariably found it to be unimpaired so far as the patient could judge.

#### DIAMETER OF THE STREAM.

Questions as to the diameter of the stream must be carefully put, otherwise the patient will misunderstand them. An easy way is to keep a tapering pen-holder on one's desk, and to ask the patient if the diameter of the stream is very thin, like the end of the pen-holder, or more like some wider part of this convenient indicator. Here again it is useful to ask the patient to compare the present width of the stream with that during some earlier age period.

#### OTHER ASPECTS OF THE STREAM.

Other questions, such as delay in the starting of the stream, dribbling at the finish or the need for an increased time to complete the act, will of course be put, but they are more obvious to the patient, and are therefore often the subject of voluntary complaint.

We sometimes encounter cases in which the patient complains that he has never possessed the full and forceful stream he has observed in other men. He feels sure that this goes right back to early boyhood. Some form of *prostatisme sans prostate* will be found endoscopically, as a rule, and the relief afforded by perurethral resection is actually astounding to the patient, since the experience of ease and fullness in micturition is entirely strange to him. I do not include in this congenital group the more severe congenital obstructions, such as those due to valves in the posterior portion of the urethra, which cause gross degrees of obstruction of the whole urinary tract in early childhood.

#### RENAL SYMPTOMS IN BLADDER-NECK OBSTRUCTION.

A comparatively unusual but very interesting symptom of bladder-neck obstruction is unilateral renal pain. This may appear surprising to some readers, but I have met this symptom now in about a dozen cases, and cannot account for it, except on the score of the obstruction at the bladder neck. The patient's chief complaint is definite unilateral renal pain of varying degree, but sometimes quite colicky. In all such cases I have carried



out complete investigation, and in two of them a slight degree of dilatation of the corresponding ureter was found. Oxaluria and obscure dynamic causes were inadmissible so far as I could make out, but an early *prostatisme sans prostate* lesion, or early general adenomatosis, was present, and none of the patients have reported with recurrence since perurethral removal of the obstruction.

#### CONCLUSIONS.

The whole object of the more intimate study of early symptomatology in bladder-neck obstruction is to instil the significance of these observations first in the minds of general practitioners and then in the minds of the public, so that patients will come for diagnosis much earlier than heretofore. In this way the percentage of cases suitable for conservative treatment by the perurethral route will increase.

Many articles have been written in the last five years on the indications for the use of perurethral resection in such conditions, but let me state quite clearly that such indications should be influenced in a major fashion by the degree of urological diagnostic judgement and endoscopic technical skill possessed by the surgeon. If safety is to be maintained, only minor obstructions should be treated perurethrally at first. When technical facility is gained, adenomatous hyperplasias up to a moderate size may be attacked.

My present opinion may change, but I rather doubt whether I shall ever consider very large hyperplasias as suitable for conservative operations, since we possess such an excellent and safe technique of suprapubic prostatectomy as that bequeathed to us by our late colleague, Harry Harris.

If we exclude such gross enlargements, practically all other varieties of bladder-neck obstruction are susceptible to efficient treatment by perurethral resection. This includes very particularly carcinomatous obstructions in which treatment by endoscopic resection has proved a great blessing, allowing us to avoid establishment of the odious permanent suprapubic drain in nearly every case.

By adopting the above-mentioned conservative attitude in deciding indications for perurethral resection, we achieve an almost completely safe operation in competent hands, and I hope that in the future, with earlier diagnosis, the scope of application of this benign operation will be widened greatly. Let me issue a warning, however, that the benignity of the procedure disappears if applied to unsuitable cases by unskilled hands.

I do not desire to enter, here, into questions of technique, analysis of cases, mortality statistics and so on, but should like to state that, in collaboration with a colleague, such a report has been submitted to *The Medical Journal of Australia* for publication.



## SOME POINTS IN THE TREATMENT OF RETINAL DETACHMENT.

By J. RINGLAND ANDERSON,  
*The Alfred Hospital, Melbourne.*

It is just ten years since Gonin's treatment for detachment of the retina began to spread from Switzerland to neighbouring countries. During this time many modifications and alternative methods of treatment have been used. As it is wise from time to time to estimate their value, I am presenting the following summary. Though 62 cases is a small series, its analysis has been of value to me, and I hope it may be to others. They represent the last cases under my care. There will not be time to discuss the significance of retinal cysts and congenital folds, vitreous detachment and holes in the hyaloid, or the exact details of holes and tears and the retinal appearances that simulate them.

Of the 62 patients 53 were operated on. Electric cauterization and diathermy were the methods of treatment used. The reasons for my failure to operate on the remaining nine patients may be divided into three groups as follows:

### I. Outlook almost hopeless.

1. Detachment due to birth injury.
2. Complete detachment with profound hypotony and advancing lens opacities.
3. Cataract; old interstitial keratitis; detachment of sixteen months' duration and scarcely visible.
4. Complete detachment of at least eight months' duration; atrophic retina; no tear; injury fifteen months before.
5. Elderly patient with atrophic and much folded retina with many holes; nine months' duration.

### II. General contraindication.

6. Mother refused operation.
7. Pleurisy and mental instability.

### III. Spontaneous recovery.

8. Detachment due to exudation in association with bilateral episcleritis; general treatment, including that for constipation and oral infection, led to complete reattachment and visual restoration.
9. Detachment due to exudation which disappeared on general treatment. This patient was aged seventy-six years, and two weeks after a corneal trephine he developed a complete detachment. The retina projected centrally in four large folds, which left a square gap through which the optic disc was visible. The only treatment given was absolute rest and the use of stenopaic glasses. After four weeks the detachment had disappeared, and two years later the retina was found still to be reattached and the vision  $\frac{6}{15}$ .

One or more holes were found in 42 of the 53 patients operated on. Five of the remaining 11 patients without visible tears had sufficient lens opacities

to prevent a thorough examination, three had atrophic retinae, one had been operated on twice before, and in the remaining case the hole was evidently so peripheral that I failed to find it. Occasionally the tear was found only after a preliminary scleral puncture was made. Of these 11 patients without visible holes, five were cured by operation.

One of these was a patient aged seventy-six years, who had developed a detachment of the lower retina. A nuclear cataract was present and no retinal tear was found.

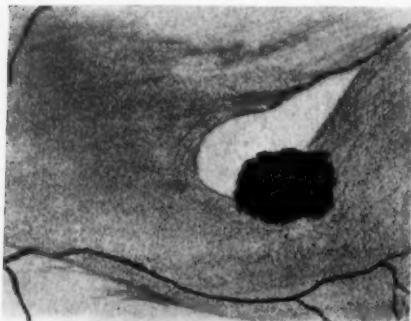


FIGURE I. Pear-shaped or round hole with dark shrunken lid.

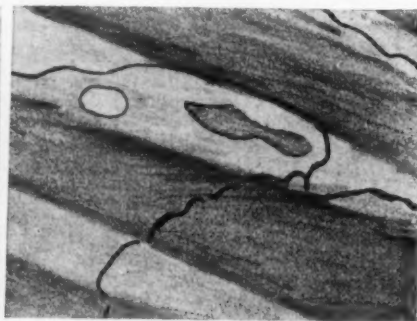


FIGURE II. Long tear with lid floating some distance away in vitreous.

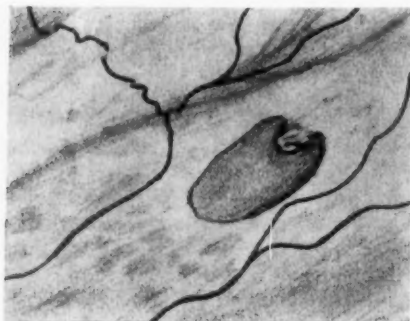


FIGURE III. Angular tear with shrunken tongue.

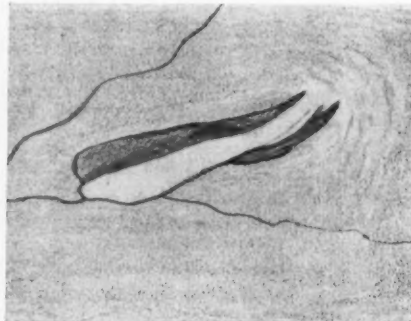


FIGURE IV. Long tongue partly hiding tear.

At the most likely situation for the tear, cauterization was carried out, the retina became reattached and vision sixteen months later was  $\frac{6}{18}$ .

The second patient was aged sixty-two years, and peripheral lens opacities prevented a view of the periphery of his fundus. Two cautery punctures joined by superficial cauterization led to complete reattachment and vision of  $\frac{6}{6}$ .

The third patient was thirty-nine years old and gave a clear history of failure of the upper field two months previously. Diathermy led to reattachment and vision of  $\frac{6}{6}$ .

The fourth patient was aged eight years. Three months after a blow his left eye began to diverge. The retina appeared to be completely detached and showed numerous atrophic areas and patches of pigment. The upper half of the sclera was

cauterized and two weeks later the lower half. The retina became reattached; but when the patient was last seen only hand movements were perceived.

The fifth patient had been operated on when a child for congenital dislocation of each lens. The right eye had an old detachment and was blind. The left eye had been trephined and a goniotomy had been performed for secondary glaucoma. A year later a detachment appeared in the inferior nasal quadrant. The retina became reattached after cauterization. At intervals of three and five weeks, detachments occurred in the superior nasal and the superior temporal quadrants. Reattachment occurred and has persisted for fourteen months after each detachment was treated with the galvano-cautery. The final vision was  $\frac{1}{15}$ —better than it had been a year before the onset of the detachment.

The important points concerning the detachments with retinal tears are presented in the following tables.

#### ANALYSIS OF TEARS FOUND.

Table I shows the frequency, the prognosis and the relationship to myopia and the age of the patient of the different types of tear found in this series of cases (see Figures I, II, III, IV, V, VII and VIII).

TABLE I.  
*Analysis of Tears Found.*

Variety of Tear.	Number of Cases.	Reattachment.		Myopia.			Average Age of Patient in Years.
		Number of Cases.	Percentage.	Low.	High (-6D).	Percentage.	
Angular .. ..	16	9	56	2	9	70	46
Round .. ..	11	11	100	3	3	55	46
Dialysis .. ..	15	12	80	1	0	7	24
No hole .. ..	11	5	45	4	2	55	49

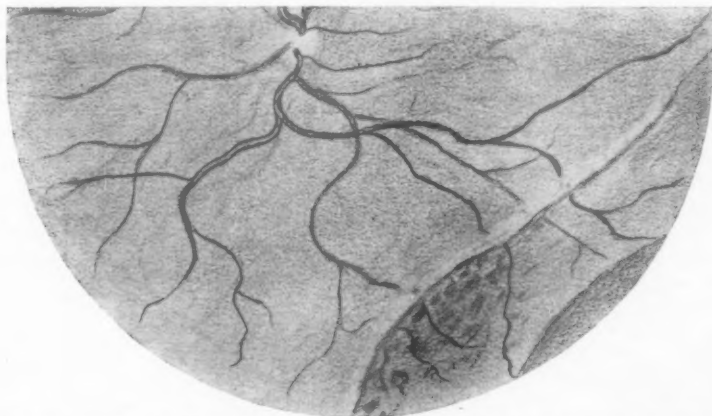


FIGURE V. Detachment with dialysis. That it has become cured spontaneously is indicated by the close approximation of the retinal edge to the choroid and by the pigmentation, which has increased in the last five years since this fundus was used as illustration in "Anterior Retinal Dialysis", *British Journal of Ophthalmology*, Volume xvi, page 705. The pseudodialysis probably represents deposits in the vitreous at a previous position of the retinal edge.

Retinal dialyses, although they frequently extend over a considerable arc, offer a good hope of success, perhaps because of the youth of the average patient. Very rarely a small dialysis may even subside spontaneously, as happened in two cases known to me, the sites of reattachment being marked by deposits of pigment (see Figure V).

#### RETINAL REATTACHMENT AS A CRITERION OF CURE.

The figures set out in Table II show the results in this series of cases if reattachment of the retina is taken as a criterion of cure.

TABLE II.  
*Reattachment as Criterion of Cure.*

Duration.	Total Number of Cases.	Percentage of Cases in which Reattachment Occurred.
One week and less .. ..	5	80
One week to one month .. ..	15	47
One month to two months .. ..	12	92
Two months to three months .. ..	5	80
Three months to six months .. ..	3	66
Six months to one year .. ..	4	75
One year to two years .. ..	5	60
Over two years .. ..	2	50

These figures show that as a rule the results are better if the operation is performed at an early date. The poor results in the "one week to one month" group are due to the fact that half of these patients had either a large angular tear or no visible hole. The great visual loss that follows the formation of a large angular tear leads to its recognition during the first month.

In addition however to retaining reattachment, it is desirable that central vision shall be retained.

#### CENTRAL VISION AS A CRITERION OF CURE.

Table III is an analysis of the visual acuity of those patients with reattached retinae.

TABLE III.  
*Central Vision as a Criterion of Cure.*

Duration	Number of Cases.	Number with Vision 6/60.	Number with Vision 6/24 to 6/60.	Number with Vision 6/12 to 6/18.	Number with Vision 6/6 to 6/9.	Percentage with Vision 6/6 to 6/18.
One week and less .. ..	4	0	0	0	4	100
One week to one month .. ..	7	0	0	4	3	100
One month to two months .. ..	11	0	3	4	4	73
Two months to three months .. ..	4	2	0	1	1	50
Three months to six months .. ..	2	0	1	1	0	50
Over six months .. ..	7	1	4	2	1	43

It is interesting that vision of  $\frac{6}{12}$  was recovered by one person whose detachment was at least two years old.

The duration of the detachment is seen to be a much more important factor in this table than it was when retinal reattachment alone was being considered. It is only in youth or if the tear is peripheral, and particularly if it is inferior, that one can expect good vision when a detachment has been present for more than three months. If we consider  $\frac{6}{18}$  and better as good vision, we may plot a curve as shown in the accompanying graph (see Figure VI).

#### INFLUENCE OF INJURY AND MACULAR DEGENERATION.

Vision rarely returns to normal after retinal reattachment when there is a history of severe injury, such as a blow with a football *et cetera*. Not infrequently there is cystoid degeneration or even a hole at the macula; the former change may occur in any detachment of long duration.

One or more true retinal cysts may be associated with a retinal dialysis. The two conditions are therefore usually found in the same situation, namely near the ora, in the inferior temporal quadrant of relatively young non-myopic patients (see Figure VII). Cyst-like appearances at the macula in these patients have been mistaken for holes. They tend to subside spontaneously after operation at the site of the dialysis.

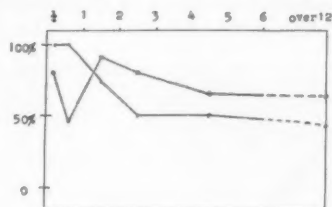


FIGURE VI. Graph showing the percentage of cases in which the retina was reattached by operation (paler line), and the percentage of the reattached cases in which the final vision was  $\frac{6}{18}$  or better (black line), plotted against the duration of the detachment in months.



FIGURE VII. Detachment with large retinal cyst in the lower temporal quadrant of the fundus. There is a typical retinal dialysis.

Cystoid degeneration, on the other hand, is associated with round and less frequently with angular holes. It is found most frequently in the superior equatorial region of older or myopic eyes, and the associated detachment tends to be more progressive than detachment found with retinal cysts.

Cystoid degeneration may closely simulate and later cause a macular hole (see Figure VIII).

Care should be taken to exclude the presence of a cyst or cystoid degeneration before a diagnosis of a macular hole is made. Red-free light is of the greatest help here. An appearance suggesting a hole is particularly

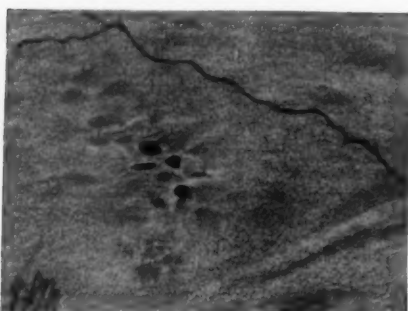


FIGURE VIII. Cystoid degeneration of the retina, with four small round holes, in the upper temporal quadrant. They were found on careful examination of the fundus after the initial discovery of a large angular tear in the lower nasal region.

common when a dialysis is present. In two cases in this series a macular hole was closed. The approach is a little difficult, but after tenotomy of the external and possibly the superior rectus quite a good exposure is obtained. The insertion of the tendon of the inferior oblique muscle acts as a guide as it extends to within 2.25 millimetres of the macula. In one of these two cases the vision returned to  $\frac{6}{30}$  (one letter). A study of Vogt's results shows that better vision than this may be expected.

On the whole, however, a history of injury, which means a greater likelihood of macular damage, considerably reduces the chance of good final vision, even if the retina is successfully reattached by operation. This is indicated in Table IV, which analyses the reattached retinae according to their known previous history, and shows that of those which recovered good vision, comparatively few had undergone injury.

TABLE IV.  
*Reattached Retinae.*

Final Vision.	Total Number Reattached.	Number Injured and Reattached.	Percentage Injury/Total.	Macular Hole or Degeneration.
Less than 6/60 .. ..	3	2	} 57%	1
6/24 to 6/60 .. ..	11	6		4
6/12 to 6/18 .. ..	8	3		0
6/6 to 6/9 .. ..	11	1	} 21%	0

#### THE INFLUENCE OF THE POSITION OF THE TEAR.

In Table V the figures show the number of cases in which reattachment occurred in relation to the position of the tear.

TABLE V.

Position.	Number of Cases.	Percentage of Total.	Reattachment.
Upper half of globe .. ..	22	50	14=63%
Lower half of globe .. ..	22	50	18=82%



## THE INFLUENCE OF THE MOVEMENT OF INTERRETINAL FLUID.

The figures in Table VI show that the upward or downward extension of the detachment has more influence on prognosis than either the age of the detachment, its initial position or the degree of myopia.

TABLE VI.

Site of Detachment.	Number of Cases.	Percentage.	Reattachment.
Above only .. .. .	5	12	100%
Below only .. .. .	13	31	100%
Above—and later below .. .. .	16	38	56%
Below—and later above .. .. .	8	19	63%

From Weve's work it is apparent that the increase in specific gravity which accompanies the formation of amylase from degenerating retina determines the descent of the interretinal fluid. It is an important finding that vitamin C prevents the formation of this enzyme. Descent of the fluid usually occurs after two weeks, and until then the tear is frequently near the centre of the detached area.

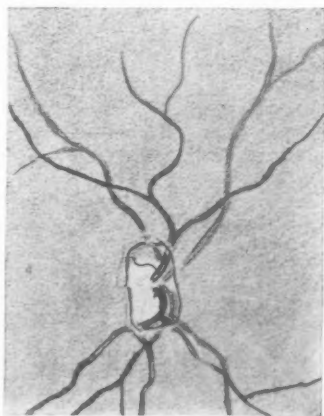


FIGURE IX. Hyaloid ring seen with a +1 diopter spherical lens, three weeks before a retinal detachment became visible.

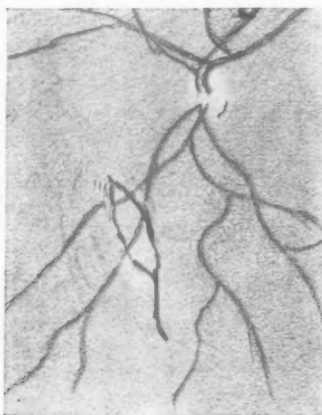


FIGURE X. The same, two weeks later, seen with a +3 diopter lens.

Posterior detachment of the vitreous is commonly associated with the formation of a retinal tear.

The accompanying illustrations (Figures IX, X and XI) show the migration forwards of the hyaloid "ring" after the vitreous has separated from the margin of the optic disc. In Figure IX the hyaloid membrane has just separated and is in focus with +1.0 diopter spherical lens. In Figure X the "ring" has moved downwards and inwards and is seen with a +3.0 diopter

spherical lens. This was the state two weeks after the operation. In Figure XI the "ring" has moved forwards in the fluid centre of the vitreous and is seen with +8.0 diopter spherical lens. Three months had elapsed when this sketch was made.



FIGURE XI. The same after operation, three months later, seen with a +8 diopter lens.

dilated pupil is essential, and the value of "Mydricine" and "Glaucosan" (iontophoresis) must not be forgotten. One may ask: Is it practicable to remove the cataract first? I have not attempted this, but Weve reports seven cases in which he removed the cataract first and then attempted to reattach the retina by diathermy. Reattachment occurred in a ten-year-old boy who had a dislocated congenital cataract and a detachment of seven years' duration. Thirteen months later the vision was  $\frac{1}{60}$ . Though he found tears in five of the other cases, in none did he obtain reattachment.

There is a reasonable chance of obtaining a satisfactory result if the detachment occurs in an aphakic eye.

In only two of the five aphakic patients in this series was I able to find a tear, and a cure resulted in one of these and in one in which no tear was found (see Figure XII). Weve found a tear in all of a series of six aphakic patients, and in four of these cases retinal reattachment was obtained.

#### PERMANENCE.

The period since the last operation in this series varies from three

#### INFLUENCE OF MYOPIA.

If we consider 6.0 diopters of myopia to be "high", we find that of 45 operated patients 27 were non-myopic, and that in 62% of these the retina became reattached; 10 were low myopes, and in 70% of these the retina became reattached; 7 were high myopes, and in 71% of these the retina became reattached. These figures show that high myopia is not necessarily a cause of failure. The factors which make for failure will be summarized later.

#### ASSOCIATION WITH CATARACT AND APHAKIA.

The presence of cataract is a very serious obstacle, as it is extremely difficult to find the hole and the patient's history is often of little localizing value. A fully

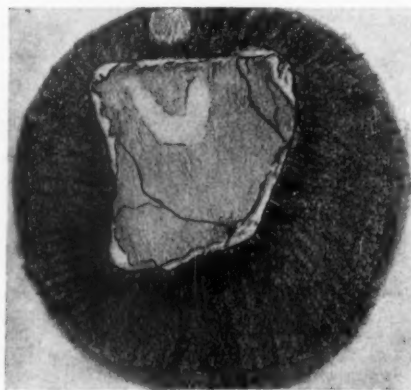


FIGURE XII. A large angular tear in the retina of an aphakic patient. Remnants of the lens capsule can be seen within the irregularly shaped pupil. Part of the fundus is also visible through the peripheral iridectomy hole above. The tear was successfully closed by operation.

months to four years. All the patients classed as "cured" have been watched for at least six months. The majority of the patients have returned to their normal activities and have experienced blows and injuries and yet have not had relapses. One patient had a cataract removed successfully by the extracapsular method three years after an operation for detachment and the retina remained attached. A vitreous hæmorrhage occurred six days after the operation for detachment. One patient has had her first baby without mishap. She was a high myope.

In three cases detachment recurred, and in one of these cure was obtained by further operations. In another, when the detachment recurred after thirteen weeks, ill-health prevented further intervention. The other recurrence took place after three weeks and three months, and as the patient was seventy-six years old and in poor health no further operation was performed. In each instance the tear was very large. There is a tendency to neglect the remainder of the retina when a hole is found. This is probably one reason why sometimes a new hole is discovered after an operation. A more thorough examination might have revealed it or an area of degeneration that is almost torn open (see Figure VIII). Such an incomplete examination is one cause of failure.

#### STATE OF OTHER EYE.

The other eye must be carefully examined for signs of degeneration, a hole or even an early detachment. In 20% of this series the other eye was also affected (see Figure XIII). The importance of this warning is emphasized when it is realized that the average age of the patients was forty years and that many had thus a considerable expectation of life.

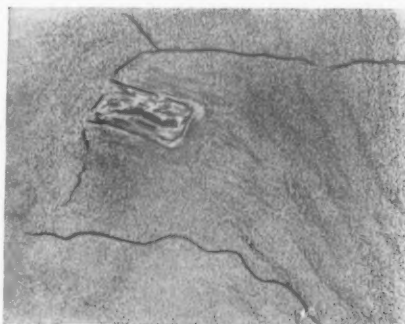


FIGURE XIII. An early tear, found on examination of the right eye of a patient on whose left eye an operation for detachment had already been performed. A vitreous adhesion of light mottled appearance has produced a tear which is just visible on its right and upper margins.

#### ANALYSIS OF FAILURES.

Of the 16 failures the following summary may be made. No hole was found in six cases. Two eyes were aphakic and peripheral capsular remnants obscured the view. In one of these cases the patient was eighty years of age and only one operation was possible. Lens opacities were sufficiently advanced in two others to make a peripheral examination difficult or impossible. One patient had been operated on twice already and the detachment was at least sixteen months old. The sixth patient was recovering from a nervous breakdown. Her detachment was over a year old and atrophic. She got out of bed and fell two nights after the operation.

A hole was found in ten cases. In six the hole was angular and large. Two of these had over 12 diopters of myopia and one had a vitreous hæmorrhage. Two developed cardiac disorders and had to be allowed out of bed;

their ages were seventy-five and fifty-six years. Another was aged seventy-five years and her detachment recurred in part at intervals of six weeks and three months after her operation. A third operation was not possible, but eighteen months later the detachment had not advanced. The sixth patient had a most extensive tear involving approximately one-sixth of the fundus. The upper flap was turned down so that the posterior retinal surface was exposed to view (see Figure XIV). Of the four remaining patients one had a traumatic cataract, one had a macular hole and a very atrophic retina of eighteen months' duration, and one had a dialysis that had not been quite



FIGURE XIV. A most extensive rent at the periphery of the retina. The posterior surface of the retina is seen as a light-coloured flap turned down over the remaining retina, which is much folded. The chorioid is visible above.

closed by operation two years earlier. The fourth patient developed a detachment with a retinal tear two weeks after a cataract extraction; the patient was very excitable; vitreous was lost and an iris prolapse appeared, which was excised; diathermy failed to reattach the retina. The patient's condition prevented proper care.

#### CONCLUSION.

Three main points arise in this summary. They are:

1. The need for cooperation with a physician in the treatment of patients with detachment, so that adequate rest and a second operation will be possible if necessary. Ill-health prevented further operation in five of the sixteen failures.
2. The serious obstacle presented by lens opacities and the need for the fullest mydriasis so that a view peripheral to certain opacities may be obtained. "Mydracaine" and "Glaucosan" must not be forgotten.
3. The necessity for the careful closure of angular tears and particularly the inclusion of the tongue in the scar.


Other points which I would stress are:

1. An exact history of the visual loss and quantitative perimetry.

2. Careful and repeated ophthalmoscopy under full mydriasis and a fuller use of the indirect method.
3. A detailed drawing with all landmarks filled in.
4. The marking of the meridian at the limbus the day before the operation.
5. The use of a minimum of "Pantocaine" (0.5%) or "Percaïne" or "Butyn" several minutes before a "Novocain" injection.
6. The marking of the sclera, not episclera, with methylene blue in 50% carbolic acid.
7. The use of a minute scleral stud, pupillary transillumination or electrolysis for the confirmation of the site of the tear.
8. Ophthalmoscopy throughout the operation.
9. Just sufficient use of the cautery or the diathermy to close the tear.
10. Adequate rest and provision for deep breathing at frequent intervals and exercises of ankles and knees.

The measure of success obtained is solely due to my endeavours to follow out the principles laid down by Gonin and to introduce only such modifications in his technique as appeared wise.

The sense of disappointment that arises as one considers these results can be tempered with a spirit of hope, for given greater attention to the points just referred to, cures in at least 90% of future series can be expected.



## SINUSITIS.<sup>1</sup>

By C. C. SCANTLEBURY,  
*Melbourne.*

I APPRECIATED very much the honour done me when I was invited to address you on the subject of antral disease. I had much pleasure in accepting, but, at once, asked that I might make the title of my address sinusitis rather than antral disease. My reason for so doing was that all the sinuses are so intimately associated with one another that infection of one sinus alone is the exception rather than the rule, and any effort to discuss antral disease invariably includes consideration of disease of other sinuses.

The tendency to use the term "antrum" in place of sinusitis is probably



FIGURE I. Showing asymmetry of frontal sinuses, one large and one small. (After Logan Turner.)



FIGURE II. Showing large anterior ethmoidal cell. (After Logan Turner.)

due to the fact that the antrum is usually the largest sinus and is certainly the most accessible, but it is not more important than the others.

Let us then name the sinuses. They are divided into two main groups:

1. Anterior group.
  - (a) Frontal sinus.
  - (b) Anterior ethmoidal sinus.
  - (c) Maxillary antrum.
2. Posterior group.
  - (a) Posterior ethmoidal sinus.
  - (b) Sphenoidal sinus.

To these may be added middle ethmoidal sinuses, but clinically it is more convenient to include the anterior portion of the middle ethmoidal cells

<sup>1</sup> Read at a meeting of the Royal Australasian College of Surgeons on October 21, 1938.



with the anterior group and the posterior portion of the middle ethmoidal cells with the posterior group.

#### ANATOMICAL CONSIDERATIONS.

I am afraid it is necessary to refer to a few anatomical points. The first point that rhinologists always keep in mind is the extreme variability of the anatomy.

All sinuses are ingrowths into the maxilla, frontal, ethmoid and sphenoid bones from the nasal

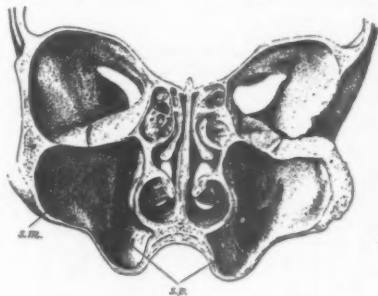


FIGURE III. Frontal section through the skull of an adult with highly developed sinus palatinus of both maxillary antra. s.m. = sinus maxillaris; s.p. = sinus palatinus of the maxillary antrum. (After Hajek.)

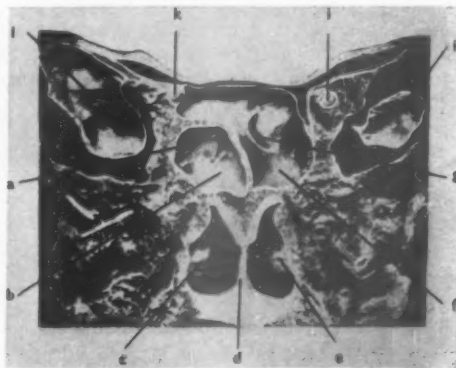


FIGURE IV. Coronal section of skull showing asymmetry of sphenoidal sinuses. (After Onodi.) a, g = ostia of sinuses; b = left sphenoidal sinus; c, e = inferior turbinal; d = nasal septum; f = right sphenoidal sinus, which extends over the left and comes into close relationship with the left optic nerve; h, l = anterior fossa of skull; i, k = optic nerves.



FIGURE V. Double maxillary antrum as result of vertical bony septum (viewed from the canine fossa); ethmoid cells opened externally through the lamina papyracea. (After Hajek.) s.m.a. sinus maxillaris anterior; s.m.p. = sinus maxillaris posterior; o.m.a. = ostium maxillare anterius; o.m.p. = ostium maxillare posterius; f.l. = fossa lacrimalis; c.e.a. = cellula ethmoidales anteriores; c.e.p. = cellula ethmoidales posteriores.

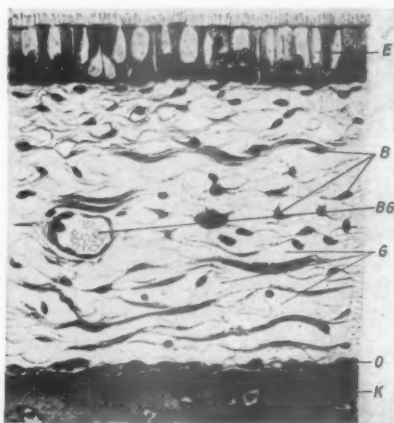


FIGURE VI. Normal mucous membrane of the ethmoid cells. (After Hajek.) E = epithelium; B = connective tissue cells; BG = blood vessels; G = tissue spaces; O = osteoblasts; K = bone.

fossa; and cellular development, as seen also in the mastoid process, is subject to all sorts of vagaries. Thus asymmetry is very common. It is seen frequently in the antra, one frequently being larger than the other; but frontal and sphenoidal sinuses show a much greater asymmetry.

These frontal and sphenoidal sinuses more often than not are totally different in size—the intersinus septum is more often found displaced to one side than in the mid-line of the body.

The anterior ethmoidal cells frequently invade the frontal or maxillary bone, forming galleries above or below the orbit, and frequently giving rise to the double antrum or double frontal sinus—the so-called bipartite condition.



FIGURE VII. Masseter and *galea aponeurotica* supplying force. (After Seward.)



FIGURE VIII. Areas thickened where force is transmitted. (After Seward.)

Sinus development occurs mainly in the first ten years of life. In the new-born the antrum is clearly seen and ethmoidal and sphenoidal cells can occasionally be made out; but at the age of ten years sinuses may have reached adult size.

The factors causing good cellular development are many. Diet, general health and endocrine factors must be important, but the effect of proper dental and palatal development must be kept in mind.

Dr. Tom Seward<sup>(1)</sup> this year read an interesting paper to the Dental Society, in which he likens the mandible and the bony structures of the base of the skull to the two jaws of a nutcracker and the sinus region generally to the nut. He considers that the masseters and the *galea aponeurotica* of the skull supply the force, and that the occlusion of the teeth determines largely the paths of the lines of force through the sinus region. He considers that bone development here is determined by this force as it is in other parts of the body, as first described by Wolff in 1892.

Whether he is right or not, there is no doubt, from my experience, that orthodontia does help in broadening the hard palate and so in producing larger antra and nasal fossæ. His theory explains the comparative thickness of the bone in the antero-medial and the postero-lateral portions of the antrum.

I want now to think of a few structures seen on the lateral wall of the nasal fossa.

A consideration of these show why it is convenient clinically to divide the sinuses into the two main groups. Those belonging to the anterior group all have their openings into the nose under cover of the middle turbinate bone; that is, they drain into the middle meatus, whilst the posterior group drain into the superior meatus. This means that pus from an anterior sinus can frequently be seen by anterior rhinoscopy, and that from a posterior sinus only by posterior rhinoscopy in the spheno-ethmoidal recess.



FIGURE IX. Normally occluding teeth transmitting force in correct direction. (After Seward.)



FIGURE X. Badly occluding teeth transmitting force in wrong direction. (After Seward.)



FIGURE XI. Badly occluding teeth transmitting force in wrong direction. (After Seward.)

Note next the inferior turbinate bone, which plays such an important part in the normal function of the nose. It is probably one of the most sensitive organs in the body. It undergoes great variation in size, and, by virtue of its blood spaces and mucous glands, secretes a lot of mucus.

In hay fever it is invariably swollen and engorged and also in many other "allergic" states; but other causes of its swelling include climatic conditions, general ill-health, over-indulgence in stimulants, and, J. S. Fraser adds, emotion.

Many of us are conscious of nasal obstruction on north-wind days, we have noticed that our nasal airway is quite good when we are away on holiday with plenty of exercise and rest, and we have observed that our alcoholic patients complain of nasal obstruction.

J. S. Fraser wrote that "open-mouthed with astonishment" should be rather shut-nosed. Perhaps that is carrying the idea rather far; but there is no doubt that this inferior turbinate gives rhinologists a great deal of trouble both in diagnosis and in treatment.

Years ago it was freely removed, but now it is treated with respect. A constant problem for the rhinologist in nasal obstruction is: (1) Is it due to allergic reaction? (2) Is it due to infective sinusitis? (3) Is it due to

infection and allergy both? (4) Is it due to swelling of the inferior turbinate from some other cause?

In solving this problem we get help from skin tests, X ray examination and other investigations to be dealt with later.

Microscopic examination of the nasal discharge is said by Gradwold<sup>(2)</sup> to show over 50% of eosinophile cells in allergic and over 50% of polymorphonuclear cells in infective conditions.

Further general anatomical points to remember are that the sinuses are in close relationship with very important structures.

The antrum is directly below the orbit; the ethmoidal sinuses are separated laterally by the paper plate of the ethmoid from the orbit and from the anterior fossa superiorly by the cribriform plate.

The frontal sinus has only the inner table of the skull between it and the anterior fossa, and, below, thin bone separates it from the orbit. The pulley of the superior oblique muscle is a very important relationship, as interference with it by disease or operation frequently causes diplopia.

The sphenoidal sinus has the pituitary fossa, the optic nerve, the cavernous sinus, the Gasserian ganglion and the middle fossa of the skull in proximity.

The lining mucosa of the sinus is the seat of the disease in sinusitis. It consists of: (a) stratified ciliated epithelium, (b) connective tissue containing blood vessels, (c) periosteum.

This extends throughout the sinuses and is continuous with the nasal mucosa. The cilia are credited with the very important function of moving any secretion towards and through the ostia and so into the nose and nasopharynx. Lowndes Yates,<sup>(3)</sup> by means of stains, has done a lot of work showing this movement.

O'Malley spoke here at the annual meeting in 1935 at great length about this subject, and claims that, even in grossly diseased mucosa, the cilia still continue to function. For this reason he claims that our main efforts should be towards seeing that the areas around the ostia are well ventilated. This may require operation such as submucous resection of the septum or partial removal of a turbinate bone. One is frequently asked the question: "What happens when the lining mucosa of a sinus is completely removed?" Many believe that it does not regenerate, but Scott-Stevenson, in "Recent Advances in Laryngophony and Otology", has collected evidence to the contrary. As I personally incline to the radical, I shall quote him. He writes on pages 170 and 171 of his book:

In 1928, Knowlton and McGregor, from experimental work on dogs, found that one month after the antral lining is removed, epithelial regeneration is well established and bone formation begins. Three months after, epithelial regeneration is complete and the canine fossa opening is nearly filled in with bone. Five months afterwards gland regeneration is well established and the muco-periosteum as a whole looks normal. The human antral sections so far examined showed that the same processes occurred in man as were shown in the dog. In 1930, Coates and Ersner, also working on the dog, confirmed the earlier work of Knowlton and McGregor so far as the frontal sinus was concerned, and by inference the remaining sinuses of the nose. Toundorf found (in Germany) at an autopsy on a man who had had a radical operation on his antrum one month before death, granulation tissue originating over all parts of the antrum, and ciliated columnar epithelium growing in from the naso-antral opening. Gorham and Bacher reported a series of cases in which a modified Caldwell-Luc operation was performed. Specimens of the regenerating lining were removed during the post-operative course at 2, 3 and 4 weeks and at 2, 3, 4, 5 and 10 months and were examined micro-

scopically. Complete regeneration of the epithelium and glands occurred in about 5 months, and the progress of regeneration could be viewed through the nasopharyngoscope. Finally, McGregor in 1931 was able to demonstrate that ciliated columnar epithelium and glands regenerated in the human antrum after a radical operation. It probably requires six months for the regeneration to approach the normal.

Infection does not prevent regeneration, though it may modify its character. Criticism has been made that although the regenerating membrane may appear normal, it may not have regained its normal function. However, little is known of normal function.

The chief functional elements are the surface epithelium with its goblet cells and cilia and the mucus glands in the stroma. One knows that they regenerate, and when they appear normal the logical assumption is that their function is normal.

In sinusitis it is the mucosa that is infected, and the pathological states found depend on the virulence of the infecting organism, the chronicity of the disease and the reaction of the patient.

#### CLASSIFICATION OF SINUSITIS.

Consideration of the histology of the normal lining will show that it reacts very freely to inflammation, and any classification must follow usual lines of acute, subacute and chronic. These may be subdivided into:

- 1 and 2. Acute and subacute.
  - (a) Hyperplastic.
  - (b) Purulent.
  - (c) Mixed hyperplastic and purulent.
3. Chronic.
  - (a) Hyperplastic polypoid.
  - (b) Hyperplastic fibrotic.
  - (c) Purulent polypoid.
  - (d) Purulent fibrotic.

Such a classification is of value, as it keeps before one's mind the different reactions of the tissues, but it does not cover all cases seen. Before going on to follow these changes through various sinuses, let us consider the importance of sinusitis to other parts of the body.

In acute conditions the orbit and the anterior fossa are in danger of infection from the anterior sinuses, with resulting orbital cellulitis or abscess of the orbit and cerebral abscess or meningitis in infection of the anterior fossa. Osteomyelitis is a serious complication, more frequently of the frontal bone, and seen usually after operation. The optic nerve and middle fossa are in danger from the posterior sinuses. The proximity of the Eustachian tube allows infection to spread to the middle ear. In my opinion, most patients with *otitis media* suffer from sinusitis.

Hoople and Cave<sup>(4)</sup> (in America) carefully examined a large series of patients with *otitis media* complicating scarlet fever. They found sinusitis in all except one. From the middle ear infection may spread intracranially. It is probable that the meninges are infected from the sinuses more commonly by this roundabout route than by any more direct one.

Discharge from the posterior nares has a very short journey to reach the trachea and lungs, and the swallow reflex very quickly helps it to the stomach. It is not surprising, then, that we find lung changes associated with chronic sinusitis.

This seems very obvious to us now when chest examination is never considered complete till the sinuses are examined too, but it is a fact that was appreciated only comparatively recently. At the 1929 congress in Sydney,

Stawell, Mackeddie, Graham Brown, Cross and others gave overwhelming evidence of this association.

Clive Eadie<sup>(5)</sup> in 1932 published the result of his examination of the sinuses in 103 cadavers at the Royal Melbourne Hospital. In eleven of these the cause of death was pneumonia, and in all of them there was macroscopic evidence of sinusitis.

This research confirmed Cross's X ray findings in another series with regard to tuberculosis of the lungs. Very little evidence of sinusitis was found in these.

I have seen hæmatemesis and melena occur during treatment for subacute sinusitis in patients who previously had no suspicion of gastric or duodenal trouble. I have no figures about the incidence of sinusitis in cases of proved ulcer, but I know that sufferers from sinusitis frequently complain of digestive symptoms.

To what degree remote parts are affected is open to discussion, but there is evidence that sinusitis is a focus for arthritis and nephritis. Hajek<sup>(6)</sup> mentions the latter as a rare association, but it has been quite common in my experience during several winters. Tilley<sup>(7)</sup> states that when superficial tissues of a sinus muco-periosteum are involved, infection tends to spread by tissue continuity, while in a more rigid confinement of sepsis in the deeper layers of the stroma, the periosteum, or in the bone infection would more probably be conveyed by vascular channels.

#### BACTERIOLOGY.

With regard to bacteriology, the causative organism varies at different times and places. Hajek<sup>(8)</sup> states that the influenza bacillus in one investigation appeared constantly and frequently in pure culture. Pneumococcus and meningococcus, *Staphylococcus aureus* and *Streptococcus pyogenes* are also mentioned.

Dr. Morgan and Dr. McInnes, at the Commonwealth Serum Laboratories, have instituted a research in this matter. They have very kindly given me their figures to date, but have asked me to make it clear that the investigation is only in its preliminary stages, and also that they would welcome help in the supplying of material.

They have investigated twenty-three cases, three of acute and twenty of chronic disease.

As well as aspirating the antra, they have taken nasal swabs. Their results may be stated shortly as follows:

1. Acute cases (3) (all pure culture).
  - Pneumococcus, 1 case.
  - Streptococcus pyogenes*, 2 cases.
2. Chronic cases (20) (three only pure culture).
  - Pneumococcus, 1 case.
  - Staphylococcus aureus*, 1 case.
  - Streptococcus hæmolyticus* (not Group A), 1 case.
  - Mixed culture (12) included pneumococcus (7 cases), *Staphylococcus aureus* (1 case), *Staphylococcus albus* (1 case), *Streptococcus viridans* (2 cases), unidentified coccus (1 case) as predominant organisms.
  - Associated organisms.
    - Staphylococcus aureus* and *albus*, 3 cases.
    - Hæmophilus influenza*, 5 cases.
    - Streptococcus viridans*, 1 case.
    - Bacillus microcatarrhalis*, 2 cases.



None of these includes that occasional case in which the diphtheria bacillus occurs in pure culture. In investigating two carriers, I have found diphtheria bacilli in pure culture in one antrum.

#### SYMPTOMS.

*Nasal Obstruction.*—Nasal obstruction is very frequent. Pus, polypi, swollen turbinates will all cause this symptom. In some it is complete, more commonly it is partial and variable.

*Nasal Discharge.*—Nasal discharge is equally prevalent. It may be anterior or posterior. It may be watery, clear or purulent.

These two may be the only symptoms present, and to distinguish the patients who are suffering from sinusitis solely from those who are totally or partly allergic, is our very difficult task, as I mentioned before when referring to the inferior turbinate.

*Pain and Headache.*—For convenience I take pain and headache together. Owing to the variable anatomy of the sinuses and the tendency of the fifth nerve to refer pain, constant localization of pain is not found, but there are several very useful generalizations.

In acute conditions, pain and tenderness can usually be noted in the affected region in the anterior sinuses. Pain and tenderness in the upper jaw generally occur in antral infection; pain and tenderness over the frontal area occur in frontal and ethmoid suppuration, though pain is frequently referred to the temple and brow in acute infection of the antrum. With the posterior group infected, pain is referred to the frontal region, the vertex and the occiput.

Pain is at times intermittent and severe. An extraordinary feature is the clockwork regularity which characterizes the onset of pain in some cases of frontal sinusitis. It may occur at the same hour every day for weeks. Hajek<sup>(9)</sup> states that he has never seen a case of true *tic douloureux* associated with sinusitis. There is no doubt that this is generally true. I have examined many patients suffering from *tic douloureux*, and have found no sinus involvement; but Mr. Julian Smith will remember a case of undoubted sphenoidal sinus empyema in a young woman. Her pain was severe and though the sinus was drained and cleared up perfectly, her pain became spasmodic and more severe. Though it did not involve the second division of the fifth nerve, the pain was a typical tic otherwise. It cleared up only when Mr. Julian Smith operated on the Gasserian ganglion. The same may be said of migraine. In my experience it is not particularly associated with sinusitis.

In chronic cases, pain and headache are more often confined to the forehead. Chronic antral disease does not cause pain and tenderness in the upper jaw, and if they are present, they are more likely to be of dental than of sinus origin. As in acute conditions, the posterior sinuses may cause pain and tenderness in the vertex and occiput.

*Anosmia.*—Anosmia may result from polypi or from pus clogging the olfactory nerve endings in the superior meatus.

*Cacosmia.*—On the other hand, cacosmia may result from the stimulation of these nerve endings by foul pus. In the differential diagnosis of sinusitis and allergic conditions, cacosmia is more help to us than anosmia.

*Sore Throat.*—I use the term sore much as the Scots do—to cover any complaint. Patients with sinusitis complain of dry, irritable or painful throats. They state that their throats are always uncomfortable. The lymphoid tissue of the pharynx frequently becomes inflamed and swells. This point must be remembered when one is examining a patient with chronic tonsillitis. Before condemning the tonsils, one should consider whether they are more sinned against than sinning. Unilateral constantly painful throat is thought by Bedford Russell to be a constant symptom of unilateral sinusitis.

*Cough.*—Cough is almost invariably associated with chronic sinusitis. It may be due to posterior discharge of muco-pus irritating the posterior wall of the pharynx or actually seeping into the larynx, or it may result from the associated lung changes. It is typically a very loose cough and productive in adults, though in children the muco-pus is usually swallowed. It is characteristic in children, and I know paediatricians who confidently diagnose sinusitis on hearing this cough across a ward.

*Wheezing.*—Many sufferers from sinusitis wheeze to a variable extent, that is to say, the association with asthma is a common one; but the relationship between the two is not quite clear—in fact, far from it. The only generalization that I feel safe in making is that the worse the sinusitis, the greater one's chance of benefiting asthma by radical sinus measures. There are cases of asthma in which irritable spots have been found in the nose, and these have been cured by nasal cauterization. This type of case cannot be considered in a discussion of sinusitis.

*General Symptoms.*—General symptoms include anorexia, insomnia and loss of weight, colour and energy. A decreased capacity for tobacco and alcohol is also noticed. Quite advanced sinusitis can occur without symptoms. We all have had this experience, and it is mentioned by all writers.

Dr. Lucy Bryce<sup>(10)</sup> was called upon some years ago to investigate a series of cases of puerperal sepsis that occurred in a hospital in a suburb of Melbourne. The same streptococcus was found in each case, and this had some very distinctive sugar reactions. Throat swabs showed the organism in the throat of the night sister. When I saw her she looked perfectly well and gave no symptoms, but her left antrum was full of pus, which grew this streptococcus in pure culture.

#### METHODS OF EXAMINATION.

Anterior and posterior rhinoscopy are routine measures and correspond with the methods of auscultation and percussion as used by the physician in examining a chest.

Transillumination is quite a useful test, but no more. If the bones of the face are at all thick or if asymmetry is present, we shall get results from the test in normal patients which may lead us to consider the sinuses pathological. On the other hand, polypi are frequently translucent, and we may consider a pathological antrum normal if we rely on the test. However, a finding of unilateral dullness can be very helpful at times.

X ray examination has become a routine. It was not always so, and only during the last twelve or fifteen years has it merited the reliance we now place on it.

Radiologists for a long time had great difficulty in preventing the bones at the base of the skull from obstructing the sinus shadows, but by clever

position work we now have three standard positions: the chin-nose, the nose-forehead, and the vertical positions.

Very thorough early work was done in Australia by Cross in Melbourne and by Graham Brown and McDowall in Brisbane.

The work of the last mentioned, also that of Graham Hodgson, can be read in *The Journal of Laryngology*, 1931 and 1932, where details of other positions can be studied.

Before leaving the subject of X ray examination I must refer to the work of Proetz. Lipiodol is used as a contrast medium in radiological work in many parts of the body, and that it should be tried in sinus work is obvious. Many did try it, and Garnet Halloran, of Sydney, as quoted by

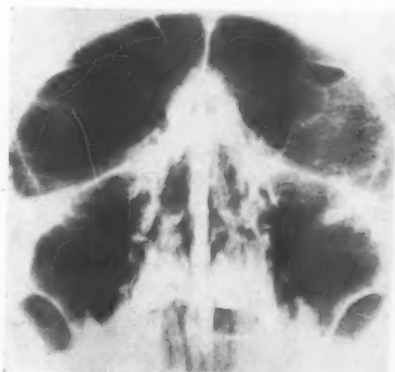


FIGURE XII. Chin-nose standard (after Cross) normal skiagram of antra.

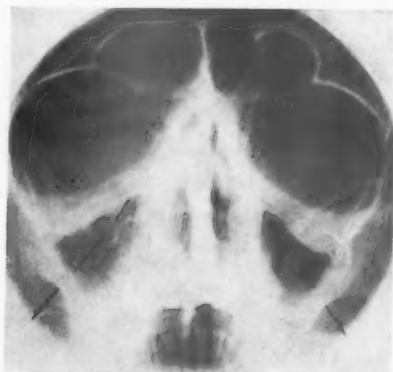


FIGURE XIII. Marginal uniform mucosal thickening. (After Cross.)

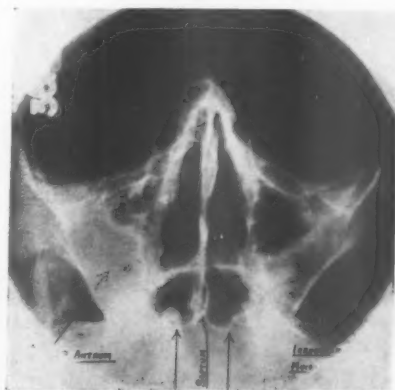


FIGURE XIV. Irregular mucosal thickening on one side, complete occlusion on the other. (After Cross.)



FIGURE XV. Normal antrum on one side. Complete occlusion on the other, either polypi or muco-pus. (After Cross.)

Graham Brown, has demonstrated changes in the antrum by its use. However, it was generally believed that as much evidence could be gained by plain X ray examination until Proetz introduced his technique.

Proetz's technique can be used both for treatment and diagnosis, and I found Ferris Smith in America and many people in England using it extensively when I was there last year—certainly more for treatment than for diagnosis.

The patient is made to lie on his back with the head lowered till the line joining his chin and the external auditory meatus is vertical. Five cubic centimetres of lipiodol, diluted with equal parts of olive oil, are instilled into the nose and mild suction is applied at half-minute intervals, the patient

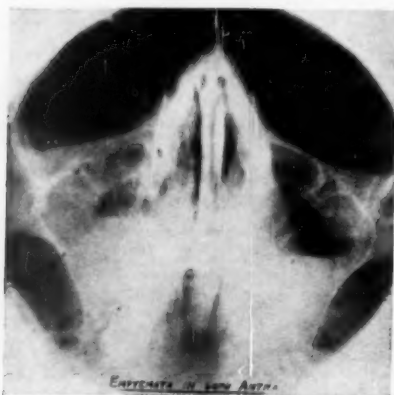


FIGURE XVI. Fluid level in both antra. (After Cross.)

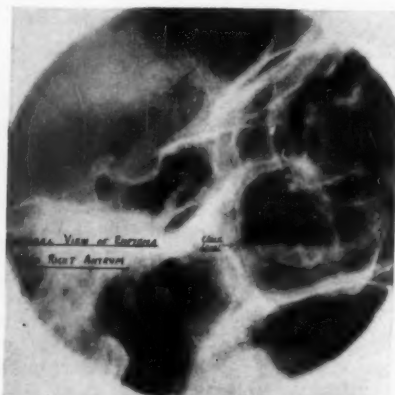


FIGURE XVII. Fluid level in antrum, lateral view. (After Cross.)



FIGURE XVIII. Large lateral single polypus in one antrum. (After Cross.)



FIGURE XIX. A polypus in floor of left antrum. A smaller mass in the right. (After Cross.)

saying "K" at the time of suction to close the pharynx. Air is thus drawn out of the posterior sinuses and lipiodol takes its place.

When this has been repeated about ten times, the patient is raised to the normal position and films are taken. If sinuses do not fill they are considered pathological. Ephedrine, 0.5%, in saline solution is used instead of lipiodol for treatment.

Watson-Williams, of Bristol, has introduced a method for the investigation of sinuses which has found great favour with many rhinologists and which has at least been a help at times to others. He introduces a cannula into the antrum, sphenoid or ethmoidal sinus, injects sterile water or saline solution, and then aspirates and incubates the contents. He decides his treatment, to a large extent, on the findings.

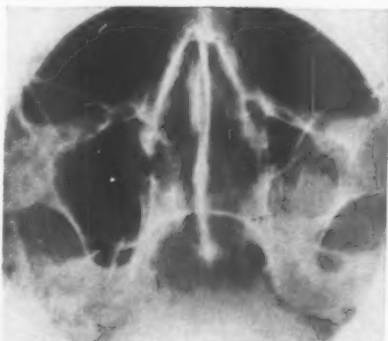


FIGURE XX. A polypus and a fluid level in one antrum. (After Cross.)

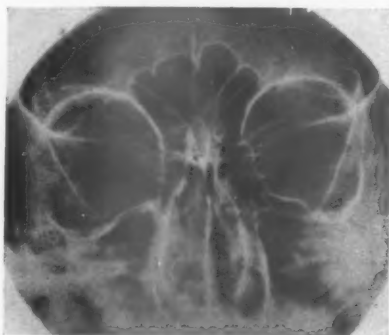


FIGURE XXI. Nose-forehead view. Dullness of one ethmoid. (After Cross.)



FIGURE XXII. Involvement of frontal sinuses. (After Cross.)

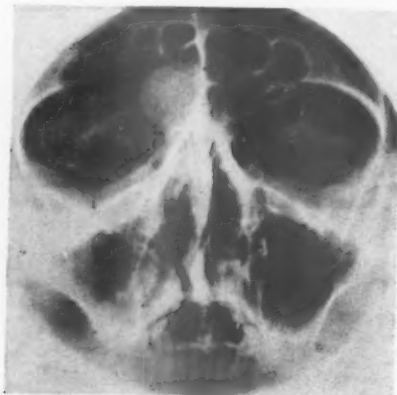


FIGURE XXIII. Polypus in one frontal sinus and mucosal thickening of one antrum. (After Cross.)

Clive Eadie carried out a very interesting research on cases of lobar pneumonia in this way.

Personally I find the method very useful in obtaining uncontaminated cultures from infected antra and in cases of retrobulbar neuritis when I wish to wash the sphenoidal sinus and incubate the return; but the fact that one so frequently obtains "negative cultures" in the presence of gross disease is apt to limit its value in my hands.

#### TREATMENT OF SINUSITIS.

Taking sinusitis generally, its treatment is mostly medical. At the British Medical Association annual meeting in 1935, I<sup>(11)</sup> attempted to outline some of the general measures adopted with children. It is outside the scope



FIGURE XXIV. Exostosis in frontal sinus. (After Cross.)



FIGURE XXV. Disease of frontal sinuses and antra in a patient, aged nine years. Operation on right side. (After Cross.)



FIGURE XXVI. Same case as shown in Figure XXV five years later, showing the growth of the unoperated sinuses. (After Cross.)

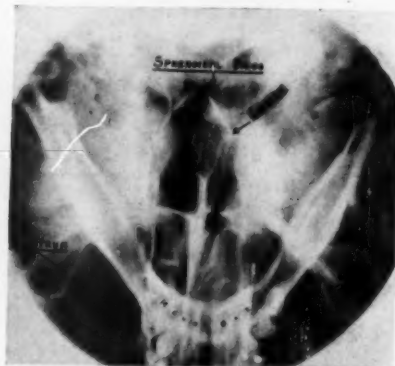


FIGURE XXVII. Normal sphenoids, vertical view. (After Cross.)



of this paper to go further into this, but one can safely say that most rhinologists are fully aware of the beneficial effects of improved hygiene and feeding in cases of chronic sinusitis.

In acute conditions patients require rest, heat, fluids, aperients, citrates, and sprays of ephedrine, 1%, in saline or colloidal silver solution. If relief is not obtained in the course of a week or so, antral lavage must be carried out. This applies to cases of infection of all the anterior sinuses, because in antral lavage the return coming from the antral ostium into the middle meatus flushes the *hiatus semilunaris* and so assists in the drainage of the ethmoid and frontal sinuses as well as of the antrum itself.

The measures are sufficient to clear up the great majority of infections, and patients whose conditions "hang fire" are nowadays getting great help from short-wave diathermy and infra-red rays.

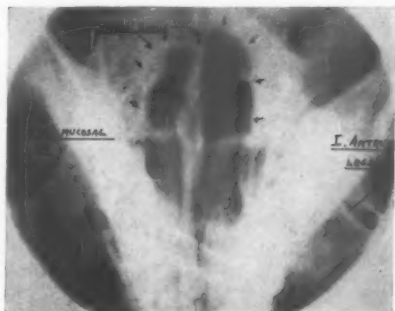


FIGURE XXVIII. Mucosal thickening of the right sphenoid. Normal left sphenoid. (After Cross.)

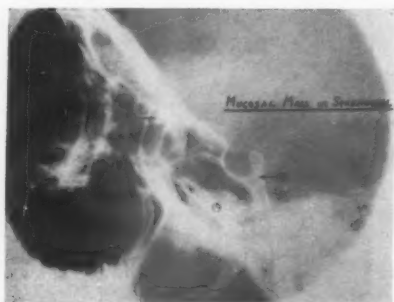


FIGURE XXIX. Mucosal mass on the floor of one sphenoid. Lateral view. (After Cross.)

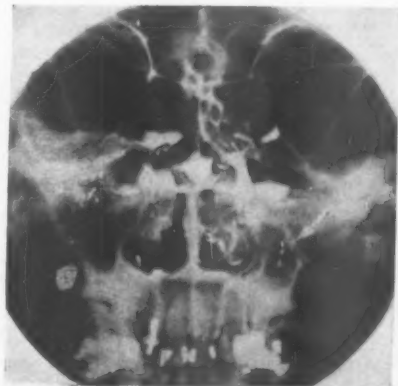


FIGURE XXX. Lipiodol retained in ethmoidal cells after Proetz suction. (After Keith Hallam.)

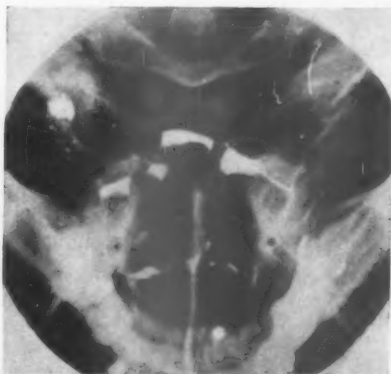


FIGURE XXXI. Lipiodol retained in sphenoids after Proetz suction. (After Keith Hallam.)

I want now to take the sinuses in turn.

*The Maxillary Antrum.*—The antrum is the largest and the most dependent of the sinuses and is subject to infection both from teeth and from the nose.

The roots of the bicuspid and molar teeth are in very close association with the floor of the antrum, the roots causing loculi and at times being separated from the interior merely by the lining membrane of the antrum. It is easy to understand an infected root causing suppuration in the antrum. This infection is usually associated with devitalized teeth, but Tilley states that it occurs from pyorrhœa pockets around vital teeth.

A large granuloma or a dentigerous cyst from a devitalized tooth is very frequently a precursor of antral suppuration, and in this way infection may spread to antra from the canines and incisors.



FIGURE XXXII. Showing return to normal in two weeks after diathermy treatment. (After Hallam.)

Good dental treatment, that is, complete removal of the tooth and granuloma without alveolar trauma *plus* antral washes by way of the nose, is usually sufficient to cure the condition; but if the infection is of long standing, an operation becomes necessary and in my opinion a radical operation is advisable. Dentists quite frequently make an opening into the antrum in removing a tooth. If the tooth has been removed entirely and without trauma, the hole usually closes, but at times very slowly.

To close such an opening is not easy. It is usually necessary to cut a flap, and a flap taken from the buccal side and fixed in position with horsehair is advised by Dr. Aird.

A root sometimes escapes into the antrum. I think it wise to open the antrum in the canine fossa and to remove the root before suppuration occurs.

I do not wish to go into the history of operations. For practical purposes we can divide them into two main groups: the intranasal and the radical.

The intranasal operation undoubtedly has many uses and at first sight is very attractive. Its attraction lies in the fact that it preserves the lining mucosa, and is not so severe as the radical, and there is not the same danger of interference with the teeth in the child.

Its disadvantages are that, properly done, it is probably the most difficult operation in our field, and, unless well done, the drainage opening is apt to close. It consists in the removal of the lateral wall of the inferior meatus of the nose under cover of the inferior turbinate. It is not an opening in the most dependent point of the antrum, as the floor of the antrum is lower than the floor of the nose.

It has been shown that the cilia still work the discharges towards the normal ostium, despite the larger opening. T. G. Millar, at the last meeting of the college in Sydney, made an X ray survey of a large number of cases in which he had operated intranasally. In many cases the clinical result was satisfactory, but in none was there a complete return of the mucosa to normal.

The radical operation is performed through the canine fossa and the mucosa is removed entirely. This is not always easily done, though it is greatly facilitated by the application of swabs of 5% trinitrophenol in 35% acetone solution, as recommended by Ferris Smith. As in the intranasal operation, the antrum is drained through the inferior meatus, the inferior turbinate bone being preserved.

In chronic cases of pansinusitis with polypi, the radical operation can be extended into the ethmoid from the canine fossa, forward to the agger cells and back to the sphenoid. This enables the nose to be freed from polypi for the time being at least. It is known as the Jansen-Horgan operation. The late Dr. Andrew did this operation as almost a routine before either Jansen or Horgan wrote of it. It falls short of the almost complete exenteration that can be achieved by the external ethmoid operation.

The preference for the intranasal or the radical antrum operation will always remain a subject for discussion. My own view is that if polypi and pus fill the antrum and nose, a radical operation is indicated. Short of this, I consider that before any operation is performed, antral lavage and general conservative treatment should be persevered with till it is clear that they cannot prevail.

The main indications for the intranasal operation are recurring infections in which the mucosa returns almost to normal in the remission, and to acute cases in which the ostia are blocked.

*Ethmoiditis.*—The ethmoid operation is done either intranasally or externally. When one considers the central anatomical position and the sponge-like structure of the ethmoid, one can easily understand why most rhinologists consider this the most important and the most difficult area of the sinuses to treat.

Pus and polypi can be shut off in remote parts of the labyrinth so that they are very difficult to get at.

The intranasal operation is very much favoured by the Watson-Williams school in Bristol, where, first of all, the agger cells are entered with special forceps and gradually exenteration is carried right back to the sphenoid and up to the cribriform plate. It is a difficult operation, and was much favoured

by Frank Andrew. A very good light with parallel rays is necessary, and the proximity of the cribriform plate and the orbit makes it always a dangerous operation.

Ballenger and Sluder have designed knives and methods for the removal of the ethmoid *en bloc*, but these have never attained universal popularity.

The external operation, in my opinion, allows much more thorough ethmoid removal and, owing to better exposure, is safer. I shall deal with this operation in some detail when considering frontal sinus disease, as frontal and ethmoidal sinuses are always operated on together when the external operation is done.

*Sphenoidal Sinus Disease.*—Sphenoidal sinus disease has been known for many years to occur, but formerly it was only in cases causing severe pain that it received much attention.

In acute sphenoidal sinusitis the pain radiating from the brow through the parietal region to the occiput is extremely severe, and dramatic relief can be obtained by washing out or opening the offending sinus.

Pickworth and Graves in Birmingham and Watson-Williams in Bristol have during the last twenty years demonstrated suppuration in the sphenoid in cases of retrobulbar neuritis and insanity.

Many rather unsatisfactory attempts have been made to trace connexion between sphenoidal sinus disease and eye changes in disseminated sclerosis. Pickworth has demonstrated what he considers is the path by which infection passes from the sphenoidal sinus to the pituitary body and the other basal structures, that is, by means of vascular sheaths. Clive Eadie, at the British Medical Association annual meeting here in 1935, showed some excellent sections demonstrating the intimate relationship of the sphenoidal sinus to these structures.

Tilley<sup>(7)</sup> states that, having observed cases of mental derangement treated by Pickworth and Graves, he considers sphenoidal sinus disease the "most active in causing this disorder".

*Frontal Sinusitis.*—There are three factors that make frontal sinusitis more important than disease of other sinuses. They are: (a) In frontal sinusitis, infection is more prone to spread to the meninges or orbit than in disease of other sinuses. (b) Osteomyelitis is a more frequent complication of frontal sinusitis than of infection of other sinuses. (c) Disfigurement is more likely to follow operation on this than on any other sinus.

The frontal sinus is operated on both externally and intranasally. Personally I have no liking for the intranasal operation, so shall deal only with the external.

I know of no condition requiring greater care and judgement as to when to operate and what operation should be done.

Acute frontal sinusitis is not an indication for an extensive operation, and usually no operation at all is advisable; but when symptoms and signs are severe, I favour the small incision and small opening through the floor of the sinus. A small tube is tied in and the sinus is gently syringed every day. I always think of this operation as the Alfred Hospital operation, as both Foster and Blaubaum described it to me before I ever did it.

In many cases this small operation is sufficient; but, if not, it will have helped barriers to form if we have to go further. It is in the further steps that complications occur.

The more the periosteum is stripped from the anterior surface of the frontal bone and the more diploe in the frontal bone are opened up by the removal of the anterior wall of the sinus, the greater the chance of osteomyelitis; and, in acute infections, this is a very real danger, though in chronic polypoid infections complications are not common.

Osteomyelitis is an extremely fatal condition. It is insidious in its onset, and may be three weeks before

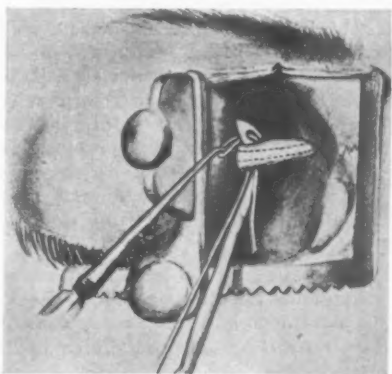


FIGURE XXXIII. Ligation of the posterior ethmoid vessels. A needle carrying number 0 catgut has been passed through the peri-orbita posterior to the vessels, and the suture is being recovered by a sharp hook. (After Ferris Smith.)

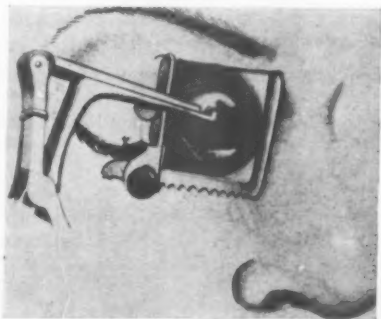


FIGURE XXXV. The anterior wall of the sphenoidal sinus is being removed by a punch forceps passed through the orbital opening. (After Ferris Smith.)

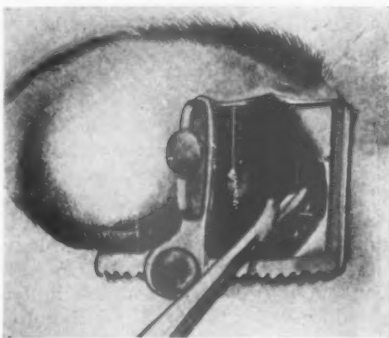


FIGURE XXXIV. Removal of the lamina papyracea with the punch forceps. (After Ferris Smith.)



FIGURE XXXVI. Osteomyelitis of the skull resulting from septic infection of the diploe after operation on the frontal sinus. A = new bone formed in place of that destroyed by inflammation; B = longitudinal sinus; C = left frontal sinus. (Tilley, "Diseases of Nose and Throat"; reproduced from *Journal of Laryngology*, 1935.)

it manifests itself. It spreads slowly back through the skull, and is usually fatal by causing extradural abscess first of all and later subdural lesions. Dan Mackenzie advocated large removal of bone and advised the formation of a break in advance of the infection by the cutting of a gutter through the outer table. I have not seen this procedure stop the spread.

In all the earlier operations on the frontal sinus, the incision was made high up in the brow and the sinus was opened through the anterior wall.

Killian's operation, which was taken up with great enthusiasm at the beginning of this century, involves the removal of the anterior wall and the whole of the contents of the sinus; but a bridge of bone was left corresponding to the brow. Later the floor was opened below and the ethmoid was exenterated.

This has been modified in later years. The incision has crept downwards and medially. Howarth and Kisch of London, Godsall of Sydney, Sewall of San Francisco and Ferris Smith of Grand Rapids have all contributed to this movement. In this way, the pulley of the superior oblique muscle tendon is not interfered with so often and the supraorbital nerve is not divided or scarred. The approach to the frontal sinus is by the floor. If the sinus is large and if one desires to remove the whole of the mucosa, it may be necessary to remove some of the anterior wall; but this is done sparingly and not at all if the inflammation is acute. Many believe that the lining mucosa should not be removed. I like to remove it.

Ethmoid exenteration is an essential part of the operation on the frontal sinus. No frontal sinus will heal if the ethmoid is not properly dealt with. No one ever went to such pains to do this as thoroughly as Ferris Smith. He described his technique very fully in *The Journal of Laryngology* in 1935, and last year I saw him do the operation several times.

He makes an incision below the brow, well to the medial side of the inner canthus, enters the ethmoid first and starts exenterating with punch forceps. He works forwards and upwards to the frontal, and backwards to the sphenoid, completely removing mucosa. A particular part of his technique is the tying of the posterior ethmoidal vessels as they pass from the orbit to the ethmoid and later the spheno-palatine; for this he uses special needles. The sphenoid is also opened and stripped and the floor removed mostly with a burr so as to make the ethmoid and sphenoid into one cavity.

To maintain an opening into the frontal lobe from the nose is necessary in the treatment of large frontal sinuses. For this, large tubes can be left in position for varying times; Ferris Smith and Howarth depend on skin grafts.

#### ACKNOWLEDGEMENTS.

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# MECHANICAL PRINCIPLES IN THE CAUSATION AND TREATMENT OF DISEASE.

## LECTURE I.

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DISORDERED mechanism plays a large part in the causation of disease; and even when the pathological condition has been initiated by some other agency, for example, bacterial, biochemical, traumatic *et cetera*, this factor frequently complicates and maintains the lesion to such a degree that in the investigation of any state of ill-health the first line of attack should be the study of its mechanics.

The subject of this paper concerns the mechanics of circulation and deals with conditions of stasis and congestion.

Life connotes activity, action, movement, and is dependent for its maintenance upon an efficient circulation. Stasis, on the other hand, signifies a state which is almost the opposite of life and living—a mere existence, stagnation, inertia, inactivity, atony—and is the result of impeded or failing circulation.

The outflow of circulating fluid in the body is commenced by cardiac contraction and thrust, and is carried on by distension and elastic recoil of arterial walls as far as the capillary network.

The return flow through venous and lymphatic channels is brought about by several factors: (i) Valves which assist the onward and prevent the backward movement of fluid in vessels. (ii) Gravity which hastens or retards flow according to the direction in which this force acts. (iii) Muscles whose alternate contraction and relaxation contribute largely to the maintenance of circulation. (iv) Latent energy contained in cardiac thrust and arterial distension which is transformed into a force acting on returning fluid. This transformation of energy is dependent on (v) limiting layers of resistant membranes, such as skin, aponeurosis, fibrous sheaths and capsules.

### VEINS AND LYMPHATICS.

It is obvious that all of the circulatory fluid which enters any area of the body is brought there by arteries alone, and the whole of the fluid must leave the area by lymphatic and venous vessels only. Any diminution in the outflow of either of these vessels must result in stasis or congestion of venous blood or lymph.

Venous and lymphatic vessels resemble one another in many respects; both are provided with valves, both are lined by a similar endothelium, both convey the fluid contents of blood and also presumably the organisms which have gained entrance to the blood stream. Probably they are subject to the same pathological changes; but, because the veins are more readily distinguish-

able by reason of their colour and size, far greater attention has been focused on them and their diseases than on their less conspicuous fellows, the lymphatic channels.

In illustration of this point reference may be made to the swelling of the lower limb which occurs as a complication in the *post partum* period, during the course of typhoid fever, pneumonia and the post-operative treatment of appendicitis and other surgical inflammations. It is usually called femoral thrombosis, and blockage of the femoral vein is supposed to be the cause; but may it not be blockage of lymphatics? The colour, the name white leg and the character of the œdema suggest this mode of production. Compare the brawny arm of the metastatic lymphadenitis of breast cancer and the brawny lower limb resulting from lymph blockage in prostatic carcinoma with the signs that characterize true femoral thrombosis. For these reasons also the condition known as wandering phlebitis may have its analogue in wandering lymphangitis, and the latter may account for those slow, silent, large intermuscular abscesses which seem to arise spontaneously.

In circulatory congestion it is much easier to cope with the results of venous obstruction since the fluid is contained wholly within blood vessels and a way out for the stagnant fluid may be found through anastomotic channels. The problem is more difficult in lymph stasis because the fluid has permeated through the tissues and is imprisoned therein. It has to be squeezed out by pressure in much the same way as water is squeezed out of a sponge, and in œdema surrounding long-standing lesions the pressure required is extraordinarily high.

It is therefore necessary, in the investigation of any chronic unhealed area, to determine whether venous or lymphatic congestion or both are interfering with repair, and, in the author's opinion, lymph stasis is by far the more important factor in the maintenance of disease.

#### VALVES.

Valves (Figure I) are found in veins and lymphatic vessels, their function being to prevent retrograde flow of the contents. They are not infrequently incompetent, and this state is either congenital or acquired as the result of increasing dilatation of the venous walls.

Incompetence gives rise to saphenous varix and to a varicosity of the venous system in the lower limb which responds to Trendelenburg's test. The writer suggests that this clinical entity involving the whole of the superficial venous network of the leg and exhibiting the characteristic features of hernia, should be known as saphenous hernia. Such a name would direct attention to the mechanics of its production and would ensure a correct diagnosis of the condition by differentiating it from other forms of varicosity.



FIGURE I. Superficial venous system of the lower limb.

Reference to the diagrams (Figure II) demonstrates its similarity to other external herniæ, and shows that every cough, every rise of abdominal pressure as the result of effort, transmits to the column of blood an intra-vascular force which has a dilating effect on every part of the superficial venous system of the leg.

A simple and easily demonstrable test of this condition is to place the patient flat in bed and to raise the extended limb slowly to about 30°. At the appropriate point the veins will be seen suddenly to become empty of

blood; then a cough will shoot a column of blood and fill the veins and give an impulse to the palpating finger, whilst deep breathing will show by ebb and flow in the leg veins how variations in thoracic and abdominal pressure are transmitted through channels unimpeded by valves from auricle to ankle veins.

It is an interesting fact, and one not generally appreciated, that such a degree of elevation is required to empty leg veins by gravity alone; in other words, between the horizontal position and this level there is still back pressure on the venous system.

Sufficient time has now elapsed to permit of an estimate of the value of the injection treatment of varicose veins. When this treatment is used indiscriminately the records show many failures and recurrences. The method is highly successful in curing varicosity of isolated veins; but when the whole network is involved, as in saphenous hernia, then the plugging of the main and several branch vessels is as futile in effecting a cure as would be the removal of the distal half of a hernial sac. The source of the trouble has not been dealt with and so dilata-

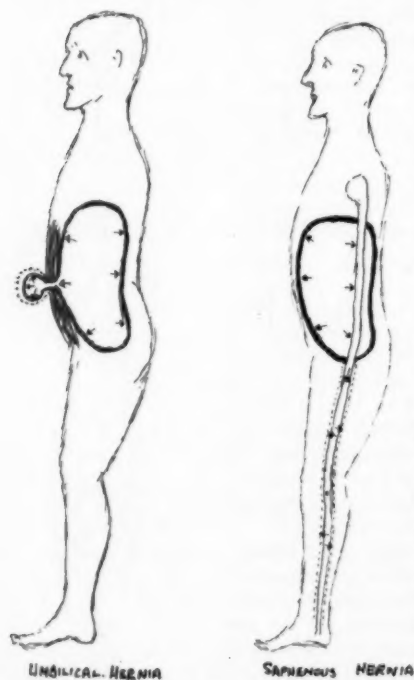


FIGURE II.

tion and varicosity must recur, since the vessels are still subjected to the dilating force of abdominal pressure. Even ligation of the saphenous vein above its last branch does not effect a cure, for if it is tied in continuity it is liable to recanalization, and if it is resected capillaries will bud out through the organized thrombus, anastomose with the venous system, become dilated by abdominal pressure and so the pre-existing condition will be restored.

The ideal remedy would be the reestablishment of an effective valvular mechanism, and as this is impossible of achievement within the vein, some form of extravascular prevention of backflow may be devised, such as muscular control acting synchronously with the abdominal muscles and counteracting the harmful effect of increased abdominal pressure.

## MUSCULAR MOVEMENTS.

Muscular movements act as an adjuvant to lymphatic and venous circulation in three ways. (i) The activity of muscles increases their metabolic rate and demands a greater blood supply. The response to this demand by the arterial system leads to an increased *vis a tergo* and so the return flow is assisted. (ii) The contraction and relaxation of muscles have a pump-like effect on venous and lymphatic vessels and force the fluid contents on their return journey. (iii) The actual movement of muscle belly and tendon and the increased volume which results from contraction exert a pressure on the surrounding tissues, and this, aided by the elastic recoil of the tissues so displaced, assists the circulation. This effect will be greater in the vicinity of muscle belly and less about tendon and least about the bones into which they are inserted.

In the process of blood transfusion and blood-letting with a venous tourniquet on the upper arm and an intravenous cannula in position, powerful contraction of forearm muscles will shoot a stream of blood as venous pressure is raised by muscular activity.

The trainer of athletes knows by experience the value of this agency and keeps the sufferers of minor muscle and joint sprains in active work. Thirty years ago its use as a remedial agent in the treatment of fractures was a feature of French surgical schools. Today it is the basis of the Böhler treatment; but still too often a limb is seen lying idle (cyanosed and œdematous) in splint or plaster. The onset of pulmonary congestion in a patient and the possibility of its dire consequences cause great anxiety; the appearance of a similar condition of stasis in another part of the body passes unobserved, yet a few simple muscle exercises will serve to counteract it.

The penalty of inactivity is inefficiency of the circulation. The paralysed limb is blue and swollen and is prone to chilblains. The dependent limb whose muscles have been in a state of disuse for a time is cyanosed and œdematous—stasis and congestion bear witness to inefficient management.

It is unsound surgery to operate in a field in which the tissues have for some time been leading a bare existence and are in a condition of disuse atrophy. The proper procedure, for example in ununited fractures, is to restore life, activity, blood supply and nutrition by a course of muscular exercises as an essential part of the preparation for operation.

Trench feet affected the soldier in the fire trench; not so his fellow whose movements were less restricted. Chilblains attack the ear where muscles are absent and movement is nil; the remaining parts of the face escape, although subject to the same climatic conditions. Fingers and toes suffer the same complaint, but on their dorsal aspect only; movement and the pressure generated by contacts suffice to prevent congestion on their flexor surfaces.

## GRAVITY.

Fluids flow downhill of their own accord; it requires the expenditure of considerable energy to cause them to flow uphill. Gravity may assist or obstruct the flow of venous and lymphatic fluid, depending upon whether the force acts with or against the direction of flow.

Obstruction to the venous flow increases venous pressure, and for that reason encourages bleeding. Witness the use of the tourniquet in blood-letting and blood transfusion. The opposite holds: aided by gravity the

venous pressure falls and the tendency to hæmorrhage lessens; for example, the simplest way to deal with bleeding veins in the leg is to elevate the limb.

The easiest method of curing chronic ulcer of the leg is by continuous, absolutely continuous, elevation of the limb; if the limb is allowed to become dependent for even a few minutes congestion recurs, pressure rises, new and delicate capillaries burst, exudate of blood into the tissues occurs, and the structures of repair are wrecked. Amputation stumps and moist gangrene demand the proper use of gravity as an aid to circulation.

For ages the head-low position has been accepted as correct for the nursing treatment of many illnesses; but from a mechanical standpoint, criticism may be directed at its use. For example, it is customary to let the patient, unconscious as the result of head injuries, lie flat in bed; but it is surely more reasonable to make use of gravity by raising the head and thus diminish the risk of further hæmorrhage from the delicate vessels of an already contused brain.

The sufferer from heart failure automatically seeks the head-high posture. The native takes a log for a head-rest during sleep or adopts the sitting position, suggesting that a brain relieved of venous congestion is in the most favourable state for rest.

Gravity is frequently misused in the treatment of infections of the hand and fingers. The circulation of the limb is considerably enfeebled by the enforced inaction of muscles, but there is no need to embarrass it further by requiring its blood and lymph to flow uphill. The spectacle of an ambulatory patient entering a casualty department carrying a blue pudding-like hand in a sling at his side is a reproach to surgery—it is the victim now of the violence of gravity abused rather than of sepsis. It cannot be expected that the natural reparative powers will act to their full extent in a hand sodden with lymph and asphyxiated with venous blood. Elevation of the limb above the heart level will at least induce a better circulation and contribute to repair.

The ingenuity of the artificial limb-maker has provided a satisfactory substitute for the foot; nothing can replace a hand stiffened by prolonged sepsis. From a national and economic standpoint alone, it is far more important to allow bed room for the patient with the septic hand than for one with the septic foot. Physiological rest and the correct use of gravity will do at least as much for the inflamed hand as will the combination of knife, wet dressing and the dependent position.

#### ACUTE INFLAMMATION AND CHRONIC ULCER.

In order to understand clearly the principles which underlie the treatment of acute inflammation and chronic ulcer, it is necessary to appreciate the difference between the acutely inflamed ulcer and the chronic unhealed surface.

The picture in acute inflammation is characterized by activity, high metabolic rate, increased arterial supply, redness, interstitial exudate which is purposeful and designed to dilute toxins and wash inflammatory products to the surface in the form of true pus, transudation and multiplication of cells arresting and ejecting the invading organism, reaction on the part of every tissue—a picture of life at its full.



The chronic unepithelialized surface is one of passivity, inertia, inaction; of diminished blood supply, its colour pale grey or dusky blue as lymph or venous stasis predominates; of œdema; its surface contaminated by saprophytes, but not infected in the sense that organisms exist within the tissues, not discharging, for that term implies a reactive process, but oozing serum, leaking through an uncovered surface as the result of back pressure—a poor lifeless helpless thing.

Of what use are antiseptics in such conditions? How can an inorganic chemical advance against the outflow which occurs in both cases? As a curative agent its value must be nil, but as a preventive, as a barrier against living organisms seeking to enter tissues which are prone to invasion, antiseptic dressings serve a very useful purpose.

The acute inflammation needs rest—absolute rest—and the natural forces will bring about repair.

The other demands action for the relief of congestion: the intelligent use of every agent that assists the onward flow of venous and lymphatic fluid—gravity, muscle movement, elastic pressure. Ointments, lotions, applications and fomentations have no part in the treatment of this lesion; circulatory stimulants, and these of a mechanical nature, alone will heal the area.

#### ELASTICITY AND TONE.

The skin of a cadaver when pinched between the fingers retains its changed form when pressure is released; the skin of the aged person behaves in much the same way. In healthy youth there is a quick return to normal. The astute physician applies this test in assessing the degree of debility in a patient.

Healthy tissues exhibit as one of their characteristic features elasticity and the power to react quickly to changes of tension. This quality of rapid response is best expressed by the name tone, which implies “pep”, vim, vigour and spring, terms indicative of life and health.

When a part is in tone it lives, is resilient and elastic. In the atonic state the tissues are relaxed, they yield to alteration in tension, but do not recover. Such tissues exist, but do little more; they have lost one of the characteristics of life. Atony may affect the whole body and occur as the result of a long illness, or it may be confined to a limb or a part following a period of inactivity and disuse.

Except in the presence of inflammation in which physiological rest is of paramount importance, the prevention of loss of tone by muscular exercises during the period of recumbency is a remedial agent of the greatest value in all classes of disease.

The latent energy of a tennis ball thrown against a resistant wall is manifest in a powerful rebound; but if thrown against a wall of hessian, the ball falls lifeless from the screen.

The elastic recoil of tissues in tone converts the latent energy of arterial pressure and thrust into a force which pumps lymph and venous fluid out of the part. In atony that latent energy is dissipated in tissues which have lost their ability to react to distension.

The remedy lies in supplying elastic pressure and encouraging muscular activity until tone is recovered.

## LIMITING AND ENVELOPING MEMBRANES.

The glazier draws a diamond point across a sheet of glass and in so doing breaks its outer skin; he applies a slight bending pressure at one end of his line and the sheet snaps across as if cut with a knife. The physical condition of glass is one of tension imprisoned within a restraining skin; relieved of restraint by the glass cutter, the sheet bursts asunder along the line.

A similar characteristic is possessed by cartilage. If a length of costal cartilage is cut obliquely to an edge and that edge is slit along its length, the two points thus formed curve outwards to form horns—when released from the compressing effect of the superficial layer, the tension of the deeper layers manifests itself in an outward bulge. Failure to recognize this peculiarity of cartilage has wrecked many a plastic operation.

Life is dependent on tension. The organism exhibits a series of tension systems, one within the other and with varying degrees of pressure, and associated with this tension there must be of necessity a restraining or limiting layer of membrane. As examples of these systems there may be instanced: blood pressure and the restraining arterial wall, the brain and its dura, marrow and cortical bone, the liver and its capsule, muscle and its enveloping fascia, the mesothelial tissues as a whole covered by the resistant layer of epithelium as skin or mucous membrane.

When the integrity of the enveloping membrane is destroyed, the mechanics of the contents is completely disordered and one of its principal effects is on the circulation; for example, *hernia cerebri*, aneurysmal dilatation, herniation of muscle through torn fascia, chronic ulcer of skin or mucous membrane.

The rebound mechanism whereby the energy of arterial pressure is transformed into an accessory pump, maintaining the flow of lymph and venous fluid, is dependent on a resistant layer. When that membrane disappears, the area of loss becomes an area of failing circulation, and stagnation and oedema ensue.

Just as the fury of a mountain torrent is completely stilled when it falls into a morass, so is the pent up tension of arterial supply dissipated in oedematous tissues and circulation fails still further.

To restore the circulation in the affected part it is necessary to reconstitute the limiting membrane or to replace it with an efficient substitute. The natural restoration is by means of epithelium; and it is obvious that the sooner this is achieved, the sooner the tissues of the area return to normal. But such restoration is rendered difficult or impossible by reason of the unhealthy condition of this unhealed area and because of the failure of circulation; epithelial cells will not grow on oedematous tissues.

It therefore becomes necessary to supply a resistant cover to the tissues which will have the same mechanical effect as the epithelial layer, and this may be done in various ways.

That most closely approximating to the normal is to produce a film on the surface and any means of coagulating the protein of the superficial layer of the granulating tissue will serve this purpose—actual heat (the simplest method of dealing with "proud flesh" is to cauterize it), silver nitrate, blue-stone, tannic acid, chromic acid, spirit, zinc salts *et cetera*.

An artificial substitute for the limiting layers is made by ambrine, paraffin wax, cellophane, silver paper, tinfoil, gutta-percha tissue or any of those materials in ordinary use for covering granulation tissue. In order that benefit may be derived from the use of such substances, pressure must be used in conjunction with them in order to provide resistance from which the arterial thrust may rebound.

Pressure, therefore, becomes an essential in the treatment of all unhealed areas.

The beneficial effect will be greater if elastic pressure is used, since by following the receding granulation tissue as the œdema and swelling are reduced, it maintains that surface pressure which is necessary, keeps up the tension in the tissues and assists in the restoration of tone.

If, further, elastic pressure be combined with activity of muscle and tendon, the benefit derived will be still greater, for then the variations in tension resulting from contraction and relaxation of muscles will be transmitted through elastic pressure to the tissues, and in this way a vital pump action will be communicated to and will restore the circulation which has failed in its vicinity. Then, and then only, will the tissues have been brought into their most favourable state for healing.

Elastic pressure may be applied in various ways, such as by the application of a bandage over thick layers of wool as in the treatment of sprained and inflamed joints; spongy rubber and rubber sponges used in connexion with skin grafting, woven rubber in the form of webbing as bandages, armlets and stockings, rubber bandages and balloons, glove fingers and bands, adhesive plaster attached so as to pull wound edges together, thus making use of the elastic properties of skin, utilization of the elastic qualities of gelatine as in Unna's paste.

"Elastoplast" was originally developed for the treatment of chronic leg ulcers, but now is found to be of advantage in different lesions and varying sites of the body. There is no magic in "Elastoplast"; it offers a simple and easily applied means of overcoming stasis, and the rapid extension of its use by the profession is a silent witness of the truth of the mechanical principles herein discussed.

#### SKIN GRAFTS.

Success in the transference of whole thickness skin graft—Wolfe graft—depends, amongst other things, on the application of elastic pressure to the transplant by rubber sponge, and this in turn depends on the recipient surface being supported on a firm foundation. Consequently Wolfe grafting is more likely to be successful in areas such as the forehead, scalp and dorsum of hand or foot, whilst failures are frequent in tissues such as the cheek and face, where the base is unstable and mobile.

In the method of grafting by dotting an area with small pieces of Reverdin or Thiersch graft the "take" is made evident by the appearance of small dry areas depressed below the general level of the wound. These are, in fact, sunken islands of epithelium in a sea of granulation tissue. The provision of a limiting and resistant membrane has rid the tissues of œdema and restored the subjacent layers to health. These observations supply the key to success in Thiersch grafting, namely, the adoption of measures which will pump the field free of venous and lymphatic fluid (by means of elastic

pressure and movement) before, during and after the transference of epithelial transplant.

### BURNS.

Burns of the third degree are exceedingly slow to heal. When the stage of infection and sloughing has come to an end, the field of injury becomes covered with a weeping mass of granulation tissue, and from the confines of the wound the blue edge of epithelium creeps slowly, ever so slowly, over the surface. It is a long, long fight against the adversaries of repair—impeded circulation, oedema and atonic tissues.

The longer the delay in healing, the more fibrous tissue is formed, so that when eventually the area is epithelialized it has an armour plate of dense scar which, contracting as it must surely do, distorts and deforms the parts into complete disablement.

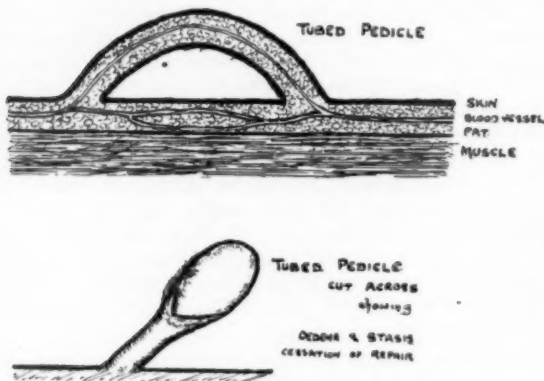


FIGURE III.

Suppurative arthritis ends in ankylosis, and, left to its own devices, the joint assumes a posture which is determined by the balance of power of the contracting muscles, and this posture is frequently one involving great deformity and disability. The hip becomes flexed and adducted, the knee bent and subluxated, the hand and foot drop. The surgeon, armed

with a knowledge of these harmful end-results, takes every precaution to prevent their occurrence, and by splintage, extension and control of muscle pull ensures a position of maximum benefit.

It is just as essential that these plans should be followed in the management of extensive burns. Fixation of the part in the best position and early and complete epithelialization by skin grafting will limit the deformity and minimize scar tissue formation and contracture. In the achievement of these results the mechanical principles which underlie skin grafting play a large part.

### OUTPOSTS OF THE CIRCULATION.

The tubed pedicle (Figure III), so often used in plastic surgery for the transference of skin and subcutaneous fat from one site to another, affords an interesting study in the mechanics of circulation.

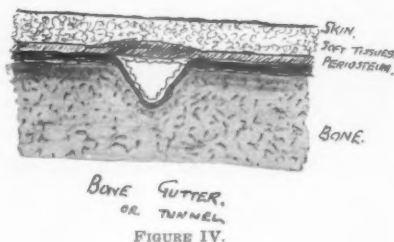
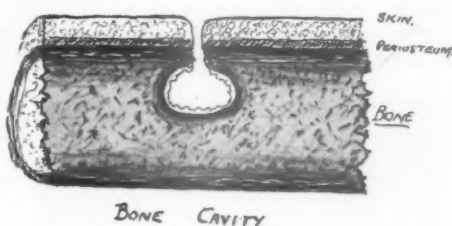
As the tube is devoid of muscle and tendon, it lacks the pump action of alternating contraction and relaxation, and as no movement of the pedicle takes place, the beneficial effect of varying tensions of the skin is missing also, and venous and lymphatic flow become dependent on two factors only: arterial thrust and its cooperating envelope of skin.

If in such a system a bare area is created, for example by cutting across the tube and leaving the raw surface exposed (Figure III), the last prop in the form of the resistant layer is removed and the circulation completely breaks down, the bare area becomes cyanosed, swollen with lymph, rigid because of the imprisoned fluid, and healing ceases.

If now mechanical principles are applied, by strapping the skin edges in tension by means of adhesive plaster, the energy of arterial thrust is once again brought into operation. The raw surface becomes soft, pliable and pink, and epithelialization quickly follows.

An analogous condition of circulation is to be found at several points in the body. These sites may be regarded as outposts of the circulatory system where certain of the forces which serve to maintain flow are missing. These areas have no muscles in their vicinity and have no movement or not sufficient movement to effect much variation in skin tension. Among such outposts are the tissues at the base and sides of finger and toe nails, the gingival margin of gums, the ears, the dorsum of phalanges, the back of heels, and the skin immediately overlying bone.

Lesions of these areas, particularly when a breach of surface exists, require circulatory assistance in the form of elastic pressure and movement. So emerges the appropriate treatment for chilblains, paronychia, old age ulcer of the ear, pyorrhœa and chronic ulcer of the leg.



#### SINUSES AND FISTULÆ.

When the unhealed area is situated in the deeper tissues the principles still hold; for example, in the case of sinuses penetrating deeply the walls of the track are in a state of impeded circulation, and this requires pressure either from within or without.

The method of causing sinuses to heal by injection and filling of the track was a common practice years ago, but has in recent times been forgotten or has fallen undeservedly into disuse. The material injected, namely, Beck's bismuth paste, Calot's cream, glycerine and iodoform or barium suspension, served a diagnostic as well as a curative purpose. Antiseptics played a minor part, the effect being mainly due to mechanical pressure from within on the lining walls.

Bone healing presents many problems. In the bone gutter (Figure IV) the non-bony wall is rendered rigid by stasis and œdema and, taking the shortest course between bony points, roofs in the gutter. It may be caused to heal by injection or by elastic pressure from without, which rids the tissue



wall of its œdema, makes it pliable and soft, and brings about its coaptation with bone.

In bone tunnel and bone cavity (Figure IV) the rigid walls cannot come into apposition. Their lining, now a bare area, becomes the site of failed circulation, granulations fail to develop or become pale grey and œdematous, and the process of healing comes to a standstill. Chronicity follows and persists until some action is taken to deal with the disordered mechanics. Filling of the tunnel or cavity and sinus and the exertion of pressure by injection frequently lead to cure (Figure V), and post-war military surgery records many remarkable successes. The alternatives are to cause collapse of the cavity or tunnel by removing one wall and compressing the soft tissues into coaptation with bone, or to provide an epithelial cover for the granulating

lining either directly, if that is possible, or by removal of one wall (saucerization of the cavity) and subsequent skin grafting. In all methods pressure becomes an essential part of the process.

The application of these mechanical principles extends to all parts of the body and affects all departments of medicine. In bronchiectasis the physician brings about alteration of tension on the base of the lung by phrenic avulsion. The chronic lung abscess presents a picture of a cavity whose walls cannot collapse, whose epithelial cover is destroyed and whose lining is a bare area. This he deals with by compression either by induction of pneumothorax or by thoracoplasty. If only he could skin graft this



FIGURE V. Reconstructed skiagram of sinus arising from sacrum. The sinus discharged on the right buttock for twelve years. It was healed by one injection of barium sulphate and has remained healed for sixteen years.

cavity under the benign influence of pressure from within, his problem would be solved with much less damage to uninvolved tissues.

The otologist chafes at the delayed healing after his mastoid operation; he must be careful to prevent the development of that state of disordered mechanics represented by the bone gutter roofed by rigid and œdematous soft tissues, and he must be prepared to make use of the beneficial effects of elastic pressure should chronic failure to heal ensue.

The rhinologist has similar problems. The epithelial lining of air sinuses is destroyed by acute inflammation or removed by too vigorous surgery—the bared area of the containing wall becomes the site of failed circulation, a chronic discharging lining of a bone cavity, the mechanics of which are not one whit different from that of the varicose ulcer; and since he may not use "Elastoplast", he must find some other means of replacing passivity by activity.

The dermatologist acknowledges that the lesion of weeping eczema may be the result of lymph stasis, and applies the principles involved in elastic pressure to solve the problem.



## EMPYEMA.

Lastly, a question is asked: "How does an empyema heal?" Do the two layers of pleura come into apposition and the empyema cavity become obliterated? If so, what force produces this result? Or does the cavity become filled with an exudate which becomes sterile so that healing occurs in this manner?

At the stage in which the acute inflammation has subsided as a result of thoracotomy and drainage of the empyema, there exists a cavity whose walls are on one aspect the bony thorax and parietal pleura, and on the other the lung and visceral pleura. Now the bony thorax presents to the empyema a concavity in all directions (Figure VI), whilst the remaining wall, the visceral pleura rendered rigid by fibrosis and œdema, takes the shortest course between its fixed points at the limits of the adherent lung and so becomes a flat plane. How now does this flat surface become adapted to its concave fellow? In other words, what makes the lung expand? The intrathoracic negative pressure which normally induces expansion of lung is absent, since the cavity is open to the exterior and pressures on each side of the visceral pleura are equal. What force is there to produce a bulging of the lung and to bring it into coaptation with the thoracic wall?

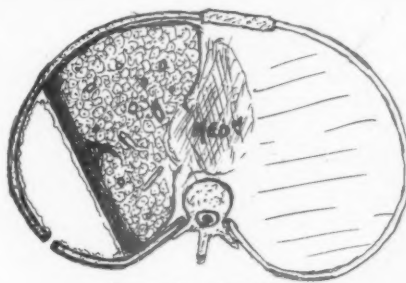


FIGURE VI. Empyema.

In artificial pneumothorax the circulatory mechanics of the visceral pleura are not altered, at least not so as to bring about stasis of lymph and venous fluid; but in open empyema the mechanics become disordered, the pleura now is a bare area, has lost that cover or resisting layer or tension without which arterial thrust fails to act as an energizer of circulation, and consequently stasis, congestion and chronicity follow.

Filling the cavity, injecting it with barium *et cetera*, will exert a pressure within, restore the circulation and frequently lead to cure.

## MECHANICAL PRINCIPLES.

Gravity, valves, muscular activity, movement, arterial thrust, epithelial covering to mesothelial tissues and elastic pressure—these are the factors concerned in the mechanical principles which underlie the conditions of stasis and congestion.

The principles are constant; the means of applying them may vary and oft-times present great difficulties, but persistent endeavour and ingenuity will find a way.

## **Surgical Technique.**

### **IMPROVED TECHNIQUE IN PROSTATECTOMY.**

By A. STANLEY ROE,  
*Brisbane.*

DURING the operation of suprapubic prostatectomy considerable difficulty is often experienced in controlling the hæmorrhage sufficiently to insert one's first two lateral sutures in the bladder neck. A happy suggestion by Mr. Graham Brown has been of so great a help to me that I felt I must hand it on. As soon as the gland is enucleated a prostatic catheter is passed into the urethra till its terminal lies just inside the bladder—the lateral openings or opening being in the prostatic urethra—then the end of the sucker is inserted into the catheter and suction applied. With a little



manœuvring, the field is kept clean and the sutures are then inserted with a minimum amount of difficulty. If bleeding persists, by holding the end of the catheter in forceps the suction can readily be exerted all around the bleeding field and the position of the bleeding point be determined. I believe a saving of fifteen to twenty minutes is thereby achieved, making the operation one of under an hour rather than over—a matter of considerable importance in such cases.

## Case Reports.

### TWO CASES OF NON-ROTATION OF THE MID-GUT LOOP IN CHILDREN.

By P. L. HIPSLEY,  
*Sydney.*

#### Case I.

R.H., AGED nine and a half years, a rather spare but not unhealthy-looking girl, was admitted to the Royal Alexandra Hospital for Children, Sydney, having suffered since birth from periodical attacks of abdominal pain and vomiting. The father stated that the child was apparently normal at birth and commenced vomiting a few days later; the vomitus always contained bile. All kinds of remedies were tried, but without any good effect; the child steadily lost weight, but later thrived sufficiently to enable her to reach a normal weight at about the age of six months. Until she reached the age of five years she would seldom go for as long a period as three weeks without a severe attack of abdominal colic and vomiting, which would last a couple of days and then cease until the next attack. During the last four years the intervals between the attacks had increased, but she would never go longer than three months without a severe attack of vomiting. Sometimes she would commence vomiting during a meal, but after an interval she might resume the meal and keep the remainder of it down. At other times

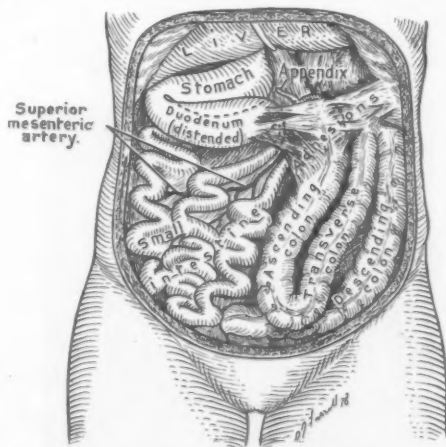


FIGURE I. Drawing of a case of non-rotation of mid-gut loop illustrating the position of the whole of the large bowel in the left half of the abdomen, the enormous dilatation of the duodenum, and the adhesions between the colon and duodenum. It also illustrates the kinking at the duodenal flexure. Actually the duodenum was much larger than shown in the illustration, and it extended much further to the left.



FIGURE II. Non-rotation of mid-gut loop, before operation. The barium enema is in the whole of the colon, which is entirely in the left side of the abdominal cavity. The caecum is in the left hypochondriac region.

the attacks of vomiting would last for several days, and she would lose a lot of weight during that time.

An examination of the abdomen after her admission to hospital revealed some abdominal distension, mainly of the upper portion. An X ray examination after an opaque meal showed that the duodenum was enormously distended, and that the large bowel lay entirely in the left half of the abdominal cavity; the small bowel was mainly in the right half (see Figures I to X). An opaque enema was given and the position of the large bowel was confirmed.



FIGURE III. Same case as Figure I, before operation and one hour after barium meal, the greater part of which is in the stomach and duodenum. The duodenum is almost as large as the stomach and shows transverse markings due to *plicae semilunares*.



FIGURE IV. Same case as Figure I, before operation and six hours after barium meal, the greater part of which is still in the stomach and duodenum, although a small portion has passed into the jejunum.

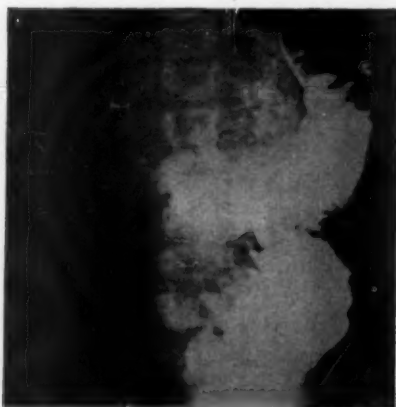


FIGURE V. Same case as Figure I, before operation and twenty-four hours after barium meal, which has passed into the large bowel.

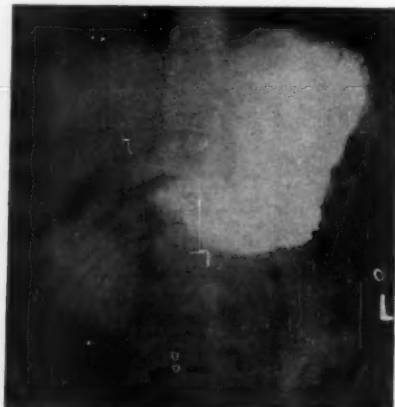


FIGURE VI. Same case as Figure I, one month after operation and immediately after barium meal, some of which is in the duodenum.

On October 6, 1937, under ether anaesthesia, an operation was performed to try to rectify the position of the bowel. A paramedian incision, about 12.5 centimetres (five inches) long, with the umbilicus about its centre, was made. When the abdomen was opened, the greatly distended duodenum presented in the wound; and, owing to its size, it was at first thought to be the stomach, which was partially hidden above and behind it. The caecum occupied a position usually occupied by the splenic flexure, and the ascending, transverse and descending colon hung down in a loop on the left side of the abdomen. The caecum and ascending colon were adherent to the duodenum and commencement of the jejunum in the neighbourhood of the duodeno-jejunal flexure (see Figure I). The whole of the small bowel was suspended by a narrow primitive mesentery which at its posterior attachment was about 5.0 centimetres (two inches) across. There was a partial volvulus of the small bowel in an anti-clockwise direction, but not



FIGURE VII. Same case as Figure I, one month after operation and one hour after barium meal, some of which is still in the stomach; the remainder has passed through the duodenum into the small bowel. Compare with Figure II.



FIGURE VIII. Same case as Figure I, one month after operation and three hours after barium meal, some of which is still in the stomach; the remainder has passed well on into the small bowel.

sufficient to produce any obstruction to the bowel itself or to its blood supply. The adhesions between the large bowel, duodenum and jejunum were carefully divided and freed; they were for the most part avascular. After all adhesions were freed it was possible to trace the duodenum into the jejunum, and after the partial volvulus was untwisted there appeared to be no further obstruction to the onward passage of intestinal contents. The caecum and ascending colon were then brought across to their normal positions, and, together with the hepatic flexure, were fixed in position with interrupted catgut sutures. The transverse colon fell into its normal position, although there was some redundancy of the colon in the neighbourhood of the splenic flexure. The child stood the operation remarkably well. She vomited once, about eighteen hours after the operation, and since then has not vomited at all. It is now ten months since the operation; she has gained 12.6 kilograms (two stone) in weight, has not had to restrict her diet in any way, and looks a very healthy girl.

#### *Comment.*

This was a case of non-rotation of the mid-gut loop, with persistence of a primitive mesentery. The termination of the duodenum and middle third of the transverse colon—in other words, the ends of the mid-gut loop—remained in close proximity after their return into the abdominal cavity from their embryonic position outside the foetal abdomen. Owing to the very narrow attachment of the mesentery, the whole of the small



FIGURE IX. Same case as Figure I, one month after operation and twenty-four hours after barium meal, the whole of which is now in the colon and rectum. The large bowel now occupies its normal position and the appendix can be seen well filled.



FIGURE X. Same case as Figure I, one month after operation and immediately after barium enema. The large bowel now occupies its normal position.

bowel had undergone a partial twist, producing an anti-clockwise volvulus. The partial obstruction of the duodeno-jejunal flexure for such a long period had brought about the great dilatation of the duodenum, which was about 10.0 centimetres (four inches) in diameter. These cases of non-rotation are rare, but occur frequently enough to make it advisable always to consider the condition when an attempt is made to diagnose the cause of persistent vomiting in early infancy. When the condition is diagnosed, early treatment should be by operation; this operation should aim at the restoration of the bowel to its normal position rather than at an attempt to relieve the obstruction by an operation such as duodeno-jejunosomy, which is the operation of choice in intrinsic duodenal obstruction like that due to atresia.

In most of the cases of non-rotation of the mid-gut loop reported, such as the one by R. H. Dodds<sup>(1)</sup> and that by Barrington Ward,<sup>(2)</sup> the duodenum takes a course downwards from the pylorus and does not cross the middle line. The superior mesenteric artery lies on the left of the duodenum and does not cross it. In the case reported above, the artery in the root of the mesentery was situated to the left side of the duodeno-jejunal flexure, although the dilated duodenum lay transversely and in front of the vertebral column. In the two cases from the literature mentioned above the duodenum was not dilated, possibly owing to the early age of the patients when the condition was discovered and treated.

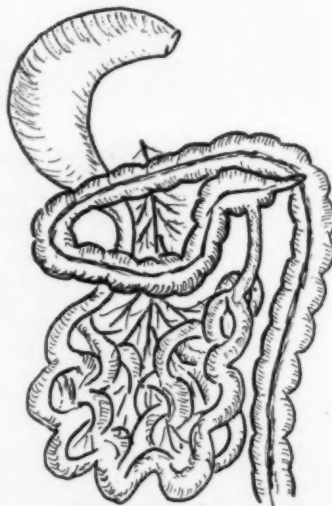


FIGURE XI. Drawing of case of non-rotation of mid-gut loop from specimen in museum of Royal Alexandra Hospital for Children, Sydney. The colon forms a loop passing transversely across the abdomen instead of hanging down vertically on the left side, as is more usual.



There is a specimen in the museum of the Royal Alexandra Hospital for Children from an infant who died a few weeks after birth from persistent vomiting (see Figure XI). It is a case of non-rotation of the mid-gut loop, but differs from my case and most of those which have been described in the literature, in that the loop consisting of the ascending and transverse colon lies across instead of hanging downwards on the left side of the abdomen, as is more usual. In this case also the stomach is twisted round so that the greater curvature is on the right side.

In the case which I have described the duodenum was enormously dilated, resembling cases which have been reported in the literature from time to time, and which have been called megaduodenum or giant duodenum. W. A. Downes<sup>(2)</sup> and F. G. Dubose<sup>(4)</sup> have reported such cases. In the cases of both these authors, however, although the duodenum was enormously dilated, there is no mention of evidence of non-rotation of the mid-gut loop, and the cause of the obstruction was not discovered. In both cases a posterior gastro-jejunostomy was performed after closure of the pylorus. The result was satisfactory in one case, but in the other death occurred, owing apparently to the opening up of the pylorus after the separation of sutures.

Other cases of megaduodenum have been described in which the muscular wall of the duodenum has been found to be greatly hypertrophied, and in which no discoverable mechanical obstruction has been found. In these cases some defect in the neuromuscular mechanism of the duodenum is believed to be the cause, as in Hirschsprung's disease.

#### Case II.

B.W., aged seven years, a healthy-looking boy, was admitted to the Royal Alexandra Hospital for Children, Sydney, having suffered during the last three years from severe attacks of abdominal colic, vomiting and constipation. The mother stated that the child was a very healthy infant, her eighth child, and was normal in every way until he reached the age of four years, when he had a severe attack of abdominal pain and vomiting lasting for four days, during which time his bowels could not be made to move. He was in hospital for two weeks and remained well for six months, when he had another attack very similar to the first. During each attack he vomited a large quantity of bile. The third attack occurred twelve months after the second, and he had had several similar ones during the last few months. He lost a lot of weight on each occasion; but after the attack was over he became ravenously hungry and rapidly put on weight again.

On examination there was very little abnormality to be detected on abdominal examination; but the mother stated that during the attacks the abdomen became greatly distended. A barium meal and enema were given, and they showed that the whole of the large bowel was in the left half of the abdomen, the caecum being in the usual position of the splenic flexure (see Figure XII).

Under ether anaesthesia the abdomen was opened through a paramedian incision, about 12.5 centimetres (five inches) long, with the umbilicus about its centre. A very similar arrangement of the bowel to that described in the first case was found. There was, however, no dilatation of the duodenum, and the mesenteric attachment of the small bowel was slightly longer than in the first case, being about 10.0 centimetres (four inches) across. There were, moreover, no adhesions between the colon and duodenum. The caecum and ascending colon were situated much more deeply in the abdomen owing to a very short mesocolon, which made the freeing of them a more difficult procedure than in the first case. Further, when freed, the whole colon was found to be much shorter than normal, and so it was impossible to restore the whole



FIGURE XII. Case II. Skiagram taken after barium enema, showing the whole of the large bowel in the left half of the abdomen.

colon to its normal position. The caecum was brought across to the right iliac fossa, but the ascending colon then crossed the abdomen, passing upwards and to the left to the splenic flexure. The abdomen was then closed. The child stood the operation well and remained in hospital for five weeks. A few weeks after he returned home he got an attack of acute intestinal obstruction, and was again admitted to hospital after the obstruction had been present for three days. At operation a loop of small bowel was found kinked and obstructed owing to adhesions following upon the first operation, and although the bowel was freed he died the following day.

*Comment.*

The obstruction which was the cause of death in this case was different from the obstruction which occurred periodically before the first operation, the latter being due to the abnormal fixation and position of the large bowel. It was a mistake, I believe, to have fixed the caecum in the right iliac fossa, seeing that the colon was abnormally short. It would have been better simply to have freed the large bowel from its fixed position deep in the abdominal cavity and not to have attempted to restore it to its normal position.

**References.**

<sup>(1)</sup> R. H. Dodds and Kenneth Heritage: "Malrotation of the Intestines in a Child Aged 9 Months; Cured by Operation", *The Proceedings of the Royal Society of Medicine*, Volume xxx, February, 1937.

<sup>(2)</sup> Lancelot Barrington Ward: "The Abdominal Surgery of Children", Second Edition, 1937: Figure LXXI, "Non-Rotation of Mid-Gut Loop", Mr. Waugh's case, page 255.

<sup>(3)</sup> W. A. Downes: "Giant Duodenum", *Annals of Surgery*, Volume xlvi, 1917, page 436.

<sup>(4)</sup> F. G. Dubose: "Megaduodenum", *Surgery, Gynecology and Obstetrics*, September, 1919, page 278.



## The Australian and New Zealand Journal of Surgery.

*All articles submitted for publication in this journal must be typewritten and double or treble spacing should be used. Each article should conclude with a brief summary and statement of conclusions. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.*

*References to articles and books should be carefully checked. In a reference the following information should be given without any abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given, with full date in each instance.*

*When illustrations are required, good photographic prints on glossy gaslight paper should be submitted. Line drawings, charts, graphs and so forth should be drawn on thick white paper in indian ink. Authors who are not accustomed to prepare drawings of this kind, are invited to seek the advice of the Editor if they are in any doubt as to the correct procedure. Skiagrams can be reproduced satisfactorily only if good prints or negatives are available.*

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### THE GORDON CRAIG RESEARCH AND EDUCATIONAL GRANTS.

WHEN the late R. Gordon Craig, one of the founders and a member of the first Council of the Royal Australasian College of Surgeons, made a munificent bequest to the College, he imposed no legal conditions upon the manner in which its Council should expend the income from this bequest. The Council determined to devote the income largely to the advancement of research in surgery and to the improvement of surgical education, in order that Gordon Craig's memory should be suitably perpetuated. Portion of the annual income has been used to establish a library service, in connexion with the library of the College, which is now named the Gordon Craig Library. By means of this service, translations and photostatic reproductions of surgical literature can be sent to the Fellows of the College, thus helping them in their efforts to advance their surgical knowledge and aiding them in research work.

The Council has given anxious and earnest consideration to the problems associated with the disbursement of the remainder of the annual income from the bequest, a sum amounting to approximately £1,700. It has decided to reserve to itself complete freedom of action in making grants each year to suitable applicants, who need not necessarily be Fellows, in order to assist

them either in their research work or in their efforts to undergo that training in surgery, either at home or abroad, which is demanded of candidates for its Fellowship. It has determined to refrain from introducing the examination system as a test of suitable recipients of these grants, but will make careful inquiries into the academic record, the personal character, and the potentialities of each applicant. It is obvious that it must also consider the economic conditions of those who apply for grants, and must expect each applicant to be ready to help himself as far as he can. In the case of research workers who require assistance, it must avoid overlapping with other funds which are available for this work. It must not be assumed that the amount of £1,700 will be available for distribution every year, because the Council will make some grants on the basis of an annual payment for a term of years, and thus must ear-mark portion of the future income of the fund to meet this expenditure.

It is expected that applicants for research grants will include not only men who propose to undertake the investigation of some abstruse problem in the laboratories of a university or an institute of research, but also men who, perhaps, have graduated as Fellows of the College and wish to conduct a research into such clinical problems as, for example, the end-results of methods of treatment of various diseases. The authorities of the College will expect to be kept informed of the progress of the work done by those men who are given grants for research work, and will reserve the right to publish the results of this work in *THE AUSTRALIAN AND NEW ZEALAND JOURNAL OF SURGERY*, if they consider that these are suitable for this journal.

It is probable that the educational grants will be made, for the most part, to men who are striving to qualify themselves for Fellowship of the College. It is hoped that the assistance given by the College will encourage men to travel and thus receive the benefits of surgical training in other countries, though it is not proposed to limit the grants to men who propose to go abroad. There are adequate facilities for post-graduate instruction of this type in Australasia, and the Council wishes to help suitable men to avail themselves of these facilities. It is the obvious duty of the Council to observe the work done by the men who are given these educational grants and to cancel future help in undeserving cases. It must be emphasized that these grants are not reserved exclusively for those men who propose to become specialists in surgery; it is one of the objects of the College to raise the general standard of surgical work, and it is to be hoped that some of the men who have received this assistance will enter general practice, particularly in large towns in the country.

This is, briefly, the manner in which the Council of the Royal Australasian College of Surgeons proposes to administer the Gordon Craig Research and Educational Grants. The recipients of these grants will be known as Gordon

Craig Scholars. The success and, indeed, the continuance of the plan will depend partly upon the wisdom displayed by the Council in the selection of scholars, and partly upon the ability and industry of the men selected by it. It is to be hoped that all Fellows of the College will help the Council, not only by advising suitable candidates to apply for grants at the time advertised in each year, but also by helping those appointed as Gordon Craig Scholars to pay tribute, by the excellence of their work, to the memory of their benefactor.

ALAN NEWTON.



## Surgery in Other Countries.

[In this column will be published short résumés of articles likely to be of practical value from Journals published in other countries and not readily accessible to surgeons in Australia and New Zealand.]

### ONE-STAGE REDUCTION OF FRACTURES BY TRACTION.

**D. Phillipides (Heidelberg):** "Zur Reposition von Knochenbrüchen in einem Akt durch Züge", *Der Chirurg*, June 1, 1937, page 409.

MECHANICAL aid to human effort is essential in the reduction of fractures, both for the extra power it affords and for the facility it offers for the maintenance of correct position during the manipulations associated with the application of the necessary splints. This is well understood in fractures of the lower limb, when the patient is confined to bed; but the upper limb presents different problems. The arrangement of the plaster room at Kirschner's Heidelberg clinic with the "extension cage" he has devised, is illustrated in Figure I. The overhead frame is two metres above the floor. The pulley axes are of iron, and they and the pulleys in them are movable, to give full flexibility in use. Midway along each of the four walls is a vertical steel tube with a sliding metal attachment carrying a hook and a pulley for horizontal traction. The fabric belts by which traction and counter-traction are applied to the patient are greased before use, and covered with "Cellophane", by which means they are easily withdrawn after having been incorporated in the plaster. The leather cuff used for the wrist is illustrated in Figure II, the arrangement of the cords so as not to constrict the hand unduly being shown. None the less, the hand must, of course, be carefully eased out to its full width after the application of the plaster. It is important that both application and relaxation of the traction force should be gradual, and for this reason the weights consist of water buckets which can be gradually filled or emptied at need.



FIGURE I.

Graduated weights are also used at times. A portable X ray machine is an essential part of the equipment of the room, with a darkened screen which can be attached to the head of the surgeon for immediate screening of the position attained. Often mild

pressure over one fragment, or a slight alteration in the direction of the pull under the screen will solve an apparently difficult problem in reduction.

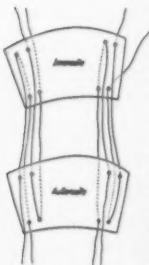


FIGURE II.

Innumerable forms of splints have been devised to meet the difficulties of fixation of upper arm fractures. All have been tried in Kirschner's clinic; but now a modelled



FIGURE III.



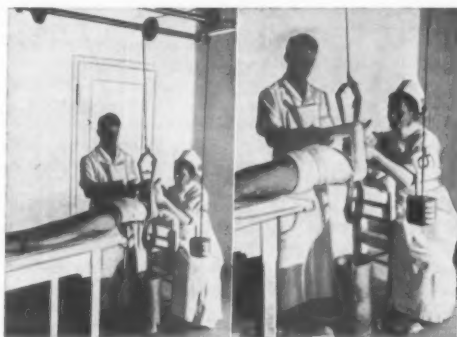


FIGURE IV.

FIGURE V.

individual case; but it is continued until screening shows a good position. The plaster is put on with the traction still applied, and traction is then gradually relaxed only after the plaster has well set. The plaster must be carefully modelled over the shoulder and axilla, so as to be accurate and well fitting. After the thoracic case has been made, a plaster splint is applied to the ventral aspect of the arm, over the axilla and down onto the thoracic plaster, to which it is bound by circular turns. Children wear the splint for some weeks; adults until good callus is seen to be forming. The upper shell of the plaster is then removed, and active movements are started as shown in Figure VI. When the arm can be raised voluntarily, the whole plaster is removed.

Fractures of the middle of the humerus are treated in much



FIGURE VI.

FIGURE VII.

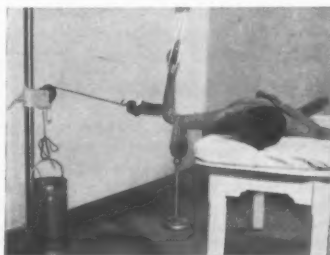


FIGURE VIII.

plaster thoracic piece with an arm extension has replaced them all. The method of applying this is shown in Figures III, IV and V, while the finished splint is illustrated in Figures VI and VII. The iron rods holding the head support in Figure III are greased before use, and can be easily withdrawn from the plaster. Reposition should always be carried out with the patient horizontal and, when the patient is a child, under a general anæsthetic.

The position shown in Figures IV and V is that used for the reduction of fractures of the upper end of the humerus. The direction and force of the traction will, of course, be varied to suit the

the same way, except that the main traction is horizontal instead of vertical, to avoid angulation at the fracture site. Fractures in the supracondylar region are similarly treated, but with counter-traction vertically downwards if necessary (Figure VIII). In fracture of the forearm the vertically upward and downward traction only is used, the horizontal pull shown in Figure VIII being omitted. Extension in these cases can be achieved by means of Kirschner wires passed through the metacarpals and the olecranon, instead of the cuffs and belts, if desired. All plasters should reach from the bases of the fingers to the shoulder.

This method is very simple and very effective, and will succeed in by far the greater number of cases. In some, however, it will be necessary to use skeletal traction and fixation.

ARTHUR E. BROWN.

#### INDICATIONS FOR ENDOSCOPIC PROSTATIC RESECTION.

K. Schneider: "Die Anzeigestellung zur Elektroresektion bei Prostatahypertrophie und deren Durchführung an der Göttingen Klinik", *Zeitschrift für Urologie*, Volume xxxi, Number 5, May, 1937, page 313.

For the past three years the Göttingen Clinic has included transurethral resection in its methods of treatment of prostatic hypertrophy. Suprapubic prostatectomy had been the usual treatment up till then, but the clinic was never quite satisfied with the mortality rate. Transurethral resection allows a larger proportion of patients to be operated upon, and the mortality is less. The criterion of cure is that the patient can pass urine easily and painlessly, leaving little or no residual urine behind. From investigations of renal efficiency made one year after operation, the author concludes that the residual should not exceed 80 cubic centimetres if the renal efficiency is not to be endangered. In the more dangerous cases, where prostatectomy was definitely contraindicated, and even resection considered rather dangerous, success was achieved by performing the operation in several stages. In one case resection could not be done since the resectoscope could not be passed, while other patients were not submitted to resection because of very severe renal deficiency, advanced accompanying disease, or refusal of the patient to undergo any form of operative procedure. From the author's experience, only a comparatively small amount of prostatic tissue need as a rule be removed. A tunnel should be produced extending forward from the edge of the prostatic projection in the bladder to the *colliculus seminalis*. Very often an adequate gutter is obtained by the removal of seven to ten strips of tissue. Coagulation is only used for strongly spurting vessels. The occasional necessity for several sittings is not considered by the author to be a disadvantage of the method, since the individual operative sessions are exceptionally free from risk. Extensive removal of tissue does not produce any better results, and adds at the same time to the risk. A catheter is left draining the bladder after resection for at least six days. On its removal, should the patient not be able to urinate freely, or should the residual urine be found to be too great, the catheter is reinserted for a few days. Should the result still be unsatisfactory, a second resection is then performed. Only rarely is a third resection needed.

The author's statistics for the past three years are as follows. The total number of cases was 128, of which 12% of patients were subjected to prostatectomy, with the high mortality of 12%. Sixty-one per centum of all patients were treated by resection, with a mortality of only 2.5%. Twenty-seven per centum of all patients had to be treated without operation, with a mortality of 29%. Most patients in this latter group were admitted to hospital in a more or less moribund condition. The results in the 78 patients treated by resection were as follows: good results were obtained in 85%, poor results in 12.5%, and death occurred in 2.5%.

R. J. SILVERTON.

#### TREATMENT OF COMPLETE LUXATION OF THE LATERAL CLAVICULAR JOINT.

Dr. H. Bronner and Dr. E. Schröder (Düsseldorf): "Zur Behandlung der vollständigen Luxation im seitlichen Schlüsselbein-gelenk", *Der Chirurg*, November 1, 1938.

WHILE a subluxation of the outer clavicular joint is not a serious injury and leaves few troubles behind it after a week or two, it is quite otherwise with a complete dislocation. The manifold nature of the procedures recommended for its repair is indication of the difficulty experienced in its efficient treatment.

The main damage done in such a luxation is not in the joint itself, but is due to tearing of the coraco-clavicular ligaments, the importance of whose function is almost universally under-estimated. Without good function of these ligaments, normal movement in the outer clavicular joint is impossible. Actually the weight of the arm is borne by these ligaments, and full function can be restored only by their careful repair. It is surprising how little this fact is recognized among surgeons, for by far the greater number of operative measures described for treatment of the condition are limited to the region of the claviculo-acromial joint itself. This joint takes part in all shoulder movements, and particularly in that of raising the arm laterally beyond the horizontal.

Backward movements of the arm, such as those associated with the use of a saw, are centred at this joint. Whatever local reparative measures are taken to reestablish the relations of the joint, by sutures, wires, kangaroo tendon, or fascial strips, fail by the breaking or pulling out of the suture material.

A minority of writers do recognize the importance of the coraco-clavicular ligament and have devised various methods for in some way restoring its function. Cadenat tried the transposition of the coraco-acromial ligament and its fixation to the clavicle; but it is often too short or too feeble. Better methods include the use of *fascia lata* strips to unite the clavicle either to the coracoid process itself or to the adjacent coraco-acromial ligament.

By whichever method it can best be done, repair of the ligament or replacement of it should be attempted. Clinical experience shows that conservative treatment of these luxations, when complete, never succeeds in reducing the displacement. Although in some of these cases there is evidence of little disturbance of shoulder movement, the patients none the less complain of some pain on full movement, of insecurity in the arm, and of easy fatigue. Most of them carry the arm with a flexed elbow. If they carry it hanging down for long there develops pain in it along with tingling in the fingers due to stretching of the brachial plexus, and possibly to some degree of compression of the subclavian artery. Patients may manage to do light work in this condition, but they cannot do heavy work, particularly when it involves raising the arm laterally above the shoulder.

A *questionnaire* elicited the information that these results are not improved on by operations which limit themselves to the acromio-clavicular joint itself; in fact, they are sometimes worse. The essential factor for reestablishment of industrial efficiency is the reconstruction by some plastic method of the coraco-clavicular ligament.

ARTHUR E. BROWN.

#### RADICAL OPERATION IN HÆMATOGENOUS OSTEOMYELITIS.

Professor Clairmont (Zürich): "*Die Radikaloperation der haematogenen Osteomyelitis*", *Der Chirurg*, May 15, 1937.

ALL methods of treatment of osteomyelitis at present in use give unsatisfactory results. The patients never get rid of the nidus of infection in the bone, which, though the acute stages may be successfully treated, cause repeated inflammatory trouble, with general and focal effects.

Of 206 patients with osteomyelitis admitted to Clairmont's clinic between 1919 and 1935, 60 suffered from an acute and 146 from a chronic condition, with a duration averaging more than twelve years before admission. Bacteriological, serological and chemical methods of improving this position have been tried, but have not met the needs of the case; and Clairmont puts forward again the oft-recommended operation of subperiosteal resection of the shaft of the bone. Its great objection lies in the uncertainty of full bony regeneration. It has been performed in Zürich in 13 cases, five times on the humerus, once on the femur, once on the tibia, once on the femur and tibia both, and five times on the fibula. Resection of the fibula, however, is not done subperiosteally. Full details of all 13 cases are set out in Clairmont's paper.

Describing the procedure, he claims that subperiosteal resection of the shaft of a long bone does solve many problems in the attainment of complete healing. On studying serial X ray films one is struck by the tremendous regenerative power of the periosteum. Once freed from the focus of infection, the osteoblasts seem to take up increased activity. Defects may occur if partial foci are left, but in the long run they are completely restored. The object of Clairmont's paper is to make a study of the factors which make for success or failure.

First, at what stage should the operation be performed? At Zürich they do not operate in the earliest stages, but operation should not be postponed too long. The best results were obtained when resection was performed three to five weeks from the beginning of the illness. At this stage the X ray picture of osteomyelitis is fully developed and indicates important points. Of these the most important are the extent and vitality of periosteal new bone formation. The nature of the osteomyelitic process can also be ascertained, and sclerosing forms are not suitable for resection. The appearance of sequestra inside the diseased area is not regarded as important. Clairmont considers that further experience will show that operation performed within the first three weeks will give the best results.

The presence of osteomyelitis in other bones is not a contraindication to the operation, for high fever persisting after smaller procedures will often abate after resection. Previous conservative operations do not contraindicate it. The unfortunately often necessary procedure of opening into a joint cavity does not make it technically impossible; but may, on the contrary, constitute an indication for the operation. To reason on these lines, which holds good at the stage at which resection is performed, is, however, quite different when rupture into a joint is threatened in the early acute stages, with its characteristic pain. The deduction from this appearance is that the site of sepsis lies close to the epiphysis, and, though the epiphyseal line is generally able to withstand invasion, none the less the participation of the epiphysis in the disease process does militate against a successful resection, as the bone does not regenerate properly in such circumstances. In these cases operation should always be performed, if possible, before extension to the epiphysis occurs. Even when an infection is radiologically demonstrable in the epiphysis, early shaft resection may succeed in avoiding a break through into the joint.

In regard to how much should be resected, experience in Zürich suggests that resection should, if necessary, be carried right up to the epiphysis; infected remnants of the shaft should not be left at this end. But at the end away from the epiphysis resection should not be carried through healthy tissue. Bone apparently infected at the diaphysal end heals well. The shaft does not reform as a symmetrical tube. In general, there are bridges and buttresses of bone, interspersed with patches of very dense fibrous tissue, which gradually become ossified. It is almost marvellous to see how nearly, under the stress of functional activity, the normal bone structure is in the long run reconstituted. Reconstitution depends apparently on the action of correct stresses correctly applied. Defects and spontaneous fractures which are often seen, represent seemingly local deficiency in periosteal regenerative power, due to infection from some locally active cause. After resection there is a strong tendency towards healing in old osteomyelitis areas; new areas do not form, and sequestration does not occur. This is in marked contrast to what occurs without resection.

With regard to technique, a tourniquet greatly facilitates matters. Nerves in close association with the bone shafts must be carefully protected. The wound is packed with some antiseptic gauze, or with Löhr's cod liver oil salve. The soft tissues may be drawn together with sutures, but this should not be overdone. For the fixation of the affected extremity an extension wire, in association with plaster, is used regularly and has never caused any further infection. The extension force must be adequate, but not too strong, or pseudarthroses may result. Some shortening of the limb operated upon must be expected in the end result; and there may be also some undesired changes in the neighbouring joints, especially in the knee.

Like all other methods of treatment in osteomyelitis, resection requires a prolonged stay in hospital; but this is worth while if healing results from it. If bone regeneration should unhappily fail, this line of treatment takes even longer than the others; but failure of regeneration should become very rare with increasing experience.

ARTHUR E. BROWN.

#### NEUROTROPHIC DISORDERS OF THE SKIN OCCURRING AFTER SPINAL ANÆSTHESIA.

H. Belohradsky (Olmütz): "The Occurrence of Neurotrophic Disorders of the Skin after Spinal Anæsthesia", *Zentralblatt für Gynäkologie*, February 13, 1937, pages 390-398.

NEUROTROPHIC disorders of the skin in the sacro-coccygeal region after spinal anæsthesia have been investigated for a long time. In the article by Belohradsky a complete documentary study of the question will be found.

The patient operated on by Belohradsky was brought under spinal anæsthesia, 0.8 cubic centimetre of "Novocain" "galena" being used. The operation of Doleris was performed without incident. On the third day the whole of the sacro-coccygeal region was the seat of a diffuse reddish coloration, although the patient did not complain of pain. With regard to the sacro-coccygeal articulation, there is on the sixth day a wound of the size of a five crown piece; and symmetrically, at two centimetres from the ulceration, the presence of small lenticular vesicles full of a lightly clouded liquid is to be noticed. Two days later the ulcerated area is blackish and necrotic. The sensibility in the whole region is diminished.

It is recognized how difficult it is to explain the appearance of a scab after an operation on patients who have no organic defects. To speak of trophic lesions due either to the neuro-paralytic hyperæmia of Schiff or to the neuro-irritative hyperæmia of

Brown-Sequard and secondary to a vasomotor influence, is to give a causal rôle to anatomical phenomena which are of no consequence. It is the same when Samuel pretends that there exist special trophic nerves on which depends the nutrition of the tissues, or when Cassirer, in rejecting the nerves and trophic centres of Samuel, accords to the tissues a vital energy of the reflex order that renders them competent to struggle against everyday injuries. Such considerations do not furnish any valid explanation for the appearance of sacro-coccygeal scabs. Moreover, when this accident follows spinal anaesthesia it is natural to incriminate either a nervous trauma, particularly a radicular one, or a deleterious action of the anaesthetizing agent. This is the whole problem.

A case reported by Mayer to the German Society of Gynaecology in 1909 is particularly interesting. After the induction of spinal anaesthesia by "Stovaine" and adrenaline, there appeared around the umbilicus necrotic cutaneous defects which very slowly ulcerated and cicatrized. The central neurotrophic origin appeared to be obvious. The lesions resembled nothing but the sacral scab, and the connexion between events was also clear. If the anaesthetic or the nervous trauma was the cause of the sacral scabs, they would appear often in patients anaesthetized via the spine; but this is not the case. Further, if Klein, having observed nine cases of deep necrosis of the sacral region in a year and a half after the use of spinal anaesthesia and having studied in animals the trophic lesions thus produced, is inclined to consider them as due to a direct affection of the roots, there is as yet no proof whether they are the result of a mechanical or of a toxic lesion.

Belohradsky would readily attribute the condition to an action of the anaesthetic on the trophic innervation, and is inclined to blame the painting of the area with tincture of iodine. But in obstetrical manipulations and in those carried out on the perineum, the use of tincture of iodine is usual, and it is exceptional to observe scabs, even if the iodized product causes a slight dermatitis.

It seems that the rôle played by local pressure exerted on the tissues of the sacro-coccygeal region cannot be other than secondary. The matter is not yet determined, and one can only report the conclusion of Belohradsky concerning his case. According to him, the scab in his patient was caused by a chemical action upon the nervous system, the patient having either presented a sensitivity to the galecin employed, which is doubtful, or the intrauterine injection of iodized alcohol at the moment of the curettage which preceded the abdominal operation playing a part in the appearance of the trouble.

DESMAREST.

Analysis from *Journal de Chirurgie*, Volume li, March, 1938, page 399.

## Reviews.

### A TEXT BOOK OF SURGERY.

**The Essentials of Modern Surgery.** Edited by R. M. HANDFIELD-JONES, M.C., M.S., F.R.C.S., and A. E. PORRITT, M.A., M.Ch., F.R.C.S.; 1938. Edinburgh: E. and S. Livingstone. Sydney: Angus and Robertson Limited. Medium 8vo, pp 1,141, with 501 illustrations. Price: 30s. net.

"THE ESSENTIALS OF MODERN SURGERY", edited by R. M. Handfield-Jones and A. E. Porritt is a text book which is complete, well produced and well illustrated.

It consists of forty-seven chapters, most of which are written by the editors. Certain aspects of surgery, however, have become so highly specialized that the cooperation of thirteen of their colleagues has been enlisted in the preparation of many of these chapters.

This is a single volume text book wherein the authors have endeavoured to base surgical teaching on the fundamental principles of anatomy, physiology and pathology; and at the commencement of many of the chapters a short description of the anatomy and embryology of the part under discussion is included.

The work deals with clinical surgery and, generally speaking, the details of technique in treatment have not been included.

No chapter on diseases of the eye appears, as it is considered that the bulk of ophthalmology is more intimately associated with medicine and neurology.



A section on venereal diseases is included and is excellently set out. Methods of treatment are presented in sufficient detail for a book of this nature, and no recent developments in this subject are overlooked.

For completeness a chapter on diseases of the female genitalia is included. This serves the purpose of drawing the attention of the student to the gynaecological conditions which are commonly met with in general surgical practice, and in particular to such diseases as may give rise to difficulties in diagnosis. Problems of purely gynaecological interest are not, therefore, included.

Of necessity, many of the chapters are brief, and, occasionally, brevity is obtained almost at the expense of accuracy. For example, in Chapter xvi the author states that Graves's disease or exophthalmic goitre is the most serious of all thyroid diseases. Surely malignant disease of the thyroid more accurately fits this description.

Various other aspects of thyroid disease are not in entire agreement with current thought in this country. For instance, in severe cases of toxic goitre ligation of both superior thyroid arteries under local anaesthesia is advised. This is not common practice in Australia.

Towards the end of the work a chapter on orthopaedic surgery is included, and covers a wide range well illustrating modern thought regarding this branch of surgery. In this chapter a section dealing with infantile paralysis and its late results is included, and is a decided acquisition, adding to the completeness of the volume.

The work is an excellent text book, is redolent of modern views throughout, and might well be adopted by the medical student as a routine text book in preparation for his final examinations and during his first few years of surgical practice.

## SURGICAL PATHOLOGY.

**A Text-Book of Surgical Pathology.** By C. F. W. ILLINGWORTH, M.D., F.R.C.S., and B. M. DICK, M.S., F.R.C.S.; Third Edition; 1938. London: J. and A. Churchill Limited. Royal 8vo, pp. 727, with 299 illustrations. Price: 36s. net.

THE appearance of three editions of Illingworth and Dick's text book on surgical pathology in six years (1932, 1935 and 1938) indicates both the welcome with which it has been received by the profession and the desire of the authors to keep it thoroughly up to date.

In this edition alterations have been made in the sections of the ductless glands by incorporation of new work. A number of fresh subjects have been included, such as obliterative blood vessel diseases, regional enteritis, nerve tumours, fat embolism.

The general form of the work is the same as that of previous editions, and maintains the high standard of clarity of both text and illustrations. There is an adequate index.

Although some of the sections may be regarded as disappointing, for example, the way in which synovial membrane is practically ignored as a constituent of joints, the work is nevertheless one of the best text books of surgical pathology available in the English language, and reflects great credit on the standard of the teaching of the subject in Scottish schools.

## ANATOMY FOR NURSES.

**Illustrations of Anatomy for Nurses.** By E. B. JAMIESON, M.D.; 1938. Edinburgh: E. and S. Livingstone. Medium 8vo, pp. 64 (62 plates). Price: 7s. 6d. net.

DR. E. B. JAMIESON'S small book is made up of a number of semi-diagrammatic illustrations taken from his "Illustrations of Regional Anatomy". Its purpose is to provide anatomical plates suitable for nurses undergoing instruction in that subject. We feel that the scope of anatomy, as suggested by the illustrations in the book, is far wider than is or should be taught to nurses. Among the illustrations included are the sacral plexus (in detail), the gluteal region, the cutaneous nerves of the forearm and hand, and the brachial plexus (in detail).

It would be an exacting examining body which would require from nurses any more than the most superficial knowledge of subjects such as these. In the time given to their anatomical instruction, in this country at least, nurses cannot become acquainted



with more than the rudiments of anatomy. It is perhaps undesirable that they should attempt to do so.

Of the quality of the illustrations in the book there can be no question; but we think that, as an anatomical text book for nurses, there is too much detail, and that it would be beyond the power of the average trainee to understand the subject as it is here presented.

### J. B. MURPHY.

**Surgeon Extraordinary: The Life of J. B. Murphy.** By L. DAVIS, M.D., M.S., Ph.D., with a foreword by A. J. CRONIN; 1938. London: G. G. Harrap and Company Limited. Australia: Angus and Robertson Limited. Demy 8vo, pp. 287. Price: 8s. 6d. net.

"SURGEON EXTRAORDINARY", the life of the late Dr. J. B. Murphy, can be read with profit and pleasure by both members of the medical profession and laymen.

Whatever views his colleagues might have concerning the methods adopted by John B. Murphy, all will agree that he overcame what to most men would have been insuperable difficulties and handicaps to become an eminent member of the profession. He made most important contributions to the advancement of surgical knowledge, which merited world-wide recognition. The book is well written and is of absorbing interest.

### INTESTINAL OBSTRUCTION.

**The Therapeutic Problem in Bowel Obstructions: A Physiological and Clinical Consideration.** By O. H. WANGENSTEIN, B.A., M.D., Ph.D.; 1937. London: Baillière, Tindall and Cox. Super royal 8vo, pp. 381, with illustrations. Price: 27s. net.

In a monograph which was awarded the Samuel Gross Prize for 1935, the whole problem of intestinal obstruction is carefully reviewed. The uses and limitations of the duodenal tube are discussed at length, and, although there may not be general agreement that the duodenal tube has superseded the enema in the relief of intestinal distension, few surgeons will disagree with the author's contention that the use of enemata in the presence of mechanical obstruction should be strongly discouraged.

An extensive bibliography of American, British and Continental literature accompanies each chapter, and the book is excellently produced. Surgeons of experience will hesitate to accept the author's statement that enterostomy is the most satisfactory procedure in many cases of obstruction, nor will they be in accord with the statement that the failure of enterostomy occurs because the operation is not performed aseptically. The chapter on paralytic ileus is not so satisfactory as are some other parts of the book. Enterostomy does not achieve adequate decompression, spinal anaesthesia is not followed by relief of distension in any great proportion of cases, and it is not helpful to read that "in certain cases" the use of "intravenous hypertonic saline" is of value. But despite these criticisms the book is well worth a place in the shelves of the young surgeon.

### CLEFT PALATE AND SPEECH TRAINING.

**Speech Training for Cases of Cleft Palate.** By M. C. OLDFIELD, M.Ch., F.R.C.S.; 1938. London: H. K. Lewis and Company, Limited. Imperial 8vo, pp. 23, with 38 illustrations. Price: 4s. 6d. net.

THE great virtue of Mr. Oldfield's book on "Speech Training for Cases of Cleft Palate" is that it lays particular emphasis on the necessity for intensive speech training after operations on the palate. Far too often the operation is performed and the patient is lost sight of. The result is that the child grows up with an offensive voice and a warped mental outlook.

It should always be emphasized that operation is only the first step in the treatment of cleft palate; the voice training is the arduous, exacting task. To ensure adequate speech training a highly efficient teacher is needed, with adequate facilities. This, of course, restricts cleft palate operations and after-treatment to the big centres with organized clinics.

On the technical side, Mr. Oldfield's book offers a short, clear and concise account of the problems of voice production, together with some interesting aids in speech training.

## THE FUNCTIONS OF MUSCLES.

**The Functions of Human Voluntary Muscles.** By N. D. ROYLE, M.D., Ch.M., F.R.A.C.S.; 1938. Australia: Angus and Robertson Limited. Demy 8vo, pp. 42, with illustrations. Price: 3s. 6d. net.

DR. N. D. ROYLE has produced an interesting little book on the actions of voluntary muscles, which is the elaboration of lectures given in the department of anatomy of the University of Sydney. The subject is treated well, though, one cannot help thinking, somewhat briefly. We find two statements in the book with which we cannot agree. One is the statement that the *pectoralis major* can act as an abductor of the upper arm; the other is that some of the submandibular muscles open the jaw. The fallacy of the latter statement can be proved if one opens the jaw against pressure and at the same time attempts to swallow. It will be found possible to accomplish the latter; hence other muscles than the submandibular must be acting to open the jaw. There is a foreword to the book by Professor A. N. Burkitt. This book can be recommended to medical students, especially those studying anatomy, as a supplement to their text books.

## SURGERY FOR NURSES.

**Surgical Nursing and After-Treatment: A Handbook for Nurses and Others.** By H. C. RUTHERFORD DARLING, M.D., M.S., F.R.C.S., F.R.F.P.S.; Fifth Edition; 1938. London: J. and A. Churchill Limited. Crown 8vo, pp. 726, with illustrations. Price: 9s. net.

THIS well-known book by Mr. Rutherford Darling has reached the fifth edition. No further testimony of the popularity which it enjoys, is needed. The author points out that the book is really a manual of elementary surgery intended to provide for the nurse an outline of surgical diseases and their proper treatment. The author believes, and we agree with his viewpoint, that academic instruction given to nurses should deal mainly with the scientific side of surgery, the knowledge of surgical nursing being only acquired at the bedside.

Any criticism which might be offered is directed at the illustrations. Some of them are out of date, others are unnecessary. For example, what purpose can be served by illustrating an ordinary ten cubic centimetre "Record" syringe, a Paul's tube, a basin stand, or an appendicostomy catheter? Illustrations and diagrams more useful than these might be substituted.

The book is, however, an excellent one, and can be thoroughly recommended to nurses who are studying for their final examination. In addition, it should prove most valuable to them as a book of reference after they have qualified. Considering the exorbitant cost of most text books at the present time, the price is really moderate.

## A HANDBOOK OF CLINICAL SURGERY.

**A Short Practice of Surgery.** By H. BAILEY, F.R.C.S., and R. J. MCN. LOVE, M.S., F.R.C.S.; Fourth Edition; 1938. London: H. K. Lewis and Company Limited. Demy 8vo, pp. 1,004, with 818 illustrations, of which 109 are coloured. Price: 28s. net.

THE appearance of the fourth edition of "A Short Practice of Surgery", by Bailey and Love, within six years of its first issue speaks volumes for the popularity of the book and the enthusiasm of the authors.

This handy little companion has proved a great boon to students, more especially to the hard-working pass candidate who finds the usual text book rather heavy reading. The authors are excellent teachers, and their expert experience in the art of imparting the essential facts of clinical surgery has full scope in this interesting book. Well printed in easily readable type, and firmly bound, are 951 pages of useful matter which the undergraduate should find easily assimilable and readily retained.

A feature of the book which has always made an appeal is the wealth of illustrations. The pictures, 818 in number, many of them in colour, convey through the visual sense much that would be dull and possibly less intelligible in the text. The latter, however, is of a high standard. The style is that of the surgical clinician rather than that of the text book writer. Only here and there one finds a loose expression, which is pardonable in what is obviously a hastily revised edition.

In an attempt to cover the whole field, rather too much space is devoted to rarer diseases; and although small print is employed in their description, it would appear that many of the commoner conditions are passed over too briefly. For example, pharyngeal diverticula are fully discussed and excellently illustrated, whilst epithelioma of the lip is dismissed in a few lines and perforated gastric ulcer receives scant mention. Much of the book would seem to cater for the student cramming for examinations, and its usefulness is thus impaired. The chapter on appendicitis is especially well done. Much practical information is available on this subject. One of the authors rides his hobby horse rather freely on the question of delayed operation for appendicitis. This teaching is considered dangerous and hardly suited to undergraduates. Recent advances in surgical diagnosis have been included, and the physiological and biochemical aspects of surgical problems have received due recognition. Traumatic surgery is not sufficiently emphasized. Fractures and dislocations are treated very generally. Not all surgeons in this country would agree that enucleation is the correct treatment for thyroid adenomata.

A very useful final few pages are devoted to hand infections. Sound advice on the management of these disabling lesions is given, and the authors are to be congratulated on giving prominence to simple surgical conditions which are usually not stressed in text books, and which cause so much suffering and disability. The omission of detail concerning ligatures, catgut, its sterilization, incisions and their anatomical bases is possibly permissible in a book which is really a handbook of clinical surgery and not a complete treatise on the subject.

Frequent footnotes in small print, giving a short biographical sketch of important surgical personalities, a kind of "Who's Who" of the eponymic nomenclature, provide an additional novel feature. The volume is recommended as an epitome of current surgical teaching. The student and clinician should find in it much of interest and entertainment.

### "GRAY'S ANATOMY."

*Gray's Anatomy, Descriptive and Applied.* Edited by T. B. JOHNSTON, M.D., assisted by J. WHILLIS, M.D., M.S.; Twenty-Seventh Edition; 1938. London: Longmans, Green and Company. Royal 8vo, pp. 1,566, with 1,336 illustrations, of which 624 are in colour. Price: 45s. net.

We are glad to welcome a new edition of "Gray" and are particularly pleased to see that the main changes in this edition have been the introduction of knowledge gained from clinical examination. This applies particularly to the section on joints, which has been completely rewritten under the supervision of an orthopaedic surgeon. The description of the lymphatic system has also been rewritten, and new illustrations have been introduced which emphasize lymphatic drainage routes.

We should like to see a rewriting of the description of the anal musculature, a region in which clinical anatomy has far outstripped academic research. No mention is made of the perianal glands described some years ago by Sir Charles Gordon-Watson. Are there or are there not such glands?

Many new illustrations have greatly improved the section of myology. All surgeons have constantly to refer to anatomy text books to refresh their memories on less commonly explored areas, and for this purpose the new "Gray" is a necessity.

### CLINICAL OBSTETRICS.

*Clinical Obstetrics.* By A. L. MUDALIAR, B.A., M.D., F.C.O.G.; 1938. Edinburgh: Oliver and Boyd. Medium 8vo, pp. 330, with illustrations. Price: 27s. net.

THIS is a simple straightforward text-book written in English by an Indian professor for Indian students. Except for the chapter on tropical disease in relation to obstetrics,

the work is of limited interest to an Australian obstetrician; nor can the book hope to compete in the Australian field with tried and laurelled veterans that are our familiar friends. Such considerations, however, will hardly discourage either publisher or author, since this enterprise is designed to cover the vastly more attractive Eastern market.

A desire for home-made literature is a laudable ambition in any school, and it is a pleasure to recognize this trend in Dr. Mudaliar's work. His is a unique clinical and teaching experience which rightly deserves to be perpetuated in this eminently practical record.

The book shows traces of the fact that in India there is a dual standard of medical education, for, in addition to the more fully qualified graduate, there is a class of practitioner of the "licentiate" or "sub-assistant surgeon" type.

That the book is written in English is eloquent testimony to the versatility of the professor and his students; it is further indicative of the established position of English in the East. This universality may be attributed to the extraordinary diversity of native tongues, each devoid of a technological vocabulary, the failure of synthetic languages, such as Esperanto, and the ubiquitous penetration of science and commerce of British and American origin.

The arrangement of "Clinical Obstetrics" is on conventional lines, is well illustrated, and we wish it success.

## A SURGICAL HANDBOOK.

**Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery and Other Matters Connected with the Work of House Surgeons and of Surgical Dressers.** Edited by H. BAILEY, F.R.C.S.; Eleventh Edition; 1939. Bristol: John Wright and Sons Limited. Demy 8vo, pp. 530, with 362 illustrations. Price: 21s. net.

"Pye" was regarded as a classic by our teachers, but had recently lost vogue; however, this new edition should bring it back to its preeminent position as every house surgeon's companion. Hamilton Bailey has gathered a very practical band of collaborators, and with many excellent illustrations has produced a book which fills perfectly the gap between the standard text-book and practical ward work. With numerous contributors a book runs the risk of overlap and contradiction; this has been avoided by careful editing, except that on page 194 the elbow joint is used as an example of manipulative technique, while in a subsequent chapter we find the statement that the elbow should "have no single stretching movement".

The chapters on fractures by Watson Jones are some of the best in the book. So often in text-books one reads "the fracture is reduced", with no practical details of methods of procedure; here, however, minute detail is excellently described and illustrated. In the general surgical section all the little points of pre-operative and post-operative treatment are explained, although the omission of a section on thoracic conditions should be remedied in future editions.

The reference to medical dosage as "two tablets three times a day" instead of 15 grains is surely an indication of the modern therapeutic trend towards proprietary drugs. Probably also the advice that gas-gangrene antiserum should be used in the treatment of intestinal obstruction is more a tribute to advertising propaganda than to scientific research.

These points are, however, minor matters in a work the general excellence of which makes us advise every student and young surgeon to obtain this book and absorb its contents.

## PÆDIATRICS FOR THE CLINICIAN.

**Clinical Pædiatrics (The Baby).** Edited by W. R. F. COLLIS, M.A., M.D., F.R.C.P., F.R.C.P.I., D.P.H., with a foreword by A. H. DAVIDSON, M.D., F.R.C.P.I., F.C.O.G.; 1938. London: William Heinemann (Medical Books) Limited. Demy 8vo, pp. 471, with illustrations. Price: 21s. net.

Dr. W. R. F. COLLIS, of Dublin, has edited and contributed predominantly to a work which is of a high grade of excellence. It might well be alternately entitled "Practical

Pædiatrics", so meticulous has the attention been to practical aspects. This applies particularly to treatment, which in many works is given in a peculiarly nebulous fashion, so disconcerting to one faced with an emergency or to students faced with examinations.

Various chapters catch the eye. That on the premature infant is excellent, and a good case is established for the use of thyreoid extract in the treatment of these babies. Pyloric stenosis is described with a wealth of experience backing the description, and it is pleasing to see at last a description of the actual technique of feeling the tumour, neglect of which is surely responsible for the growth of adjuvant methods of diagnosis of a condition which is diagnosable by history and correct examination.

Pleasant also is it to see infant feeding robbed of its astonishingly multitudinous man-made difficulties and presented in an understandable form.

Dr. Collis has made a departure from usual practice in a book of this size in including articles from various specialties such as those of skin, eye, ear, nose and throat conditions, and also some various surgical conditions including burns and scalds, dreaded and common as they are.

To criticize on one small point: it was rather astonishing to see in a table of differential diagnoses that acute poliomyelitis produced no neck stiffness or a Kernig's sign! We must be permitted to differ.

This is a splendid book and well worth the attention of doctor and student.

## Proceedings of the Royal Australasian College of Surgeons.

### THE HYDATID REGISTRY.

THE following is the annual report of the Hydatid Registry of the Royal Australasian College of Surgeons for the year ended December 31, 1938, submitted by the Registrar-in-Chief, Sir Louis Barnett.

During the year the accumulated records, now numbering over 1,300, together with card index and précis, were duly installed in the library of the College at Melbourne and are available for reference and study.

An analysis of the records so far on file permits of the following tabulation:

Location of Cyst.	Number of Cases.	Number of Deaths.
Liver .. .. .	787	98
Multiple abdominal and pelvic and others nearly all secondary to primary liver cysts .. ..	91	13
Lungs .. .. .	260	20
Muscles and Fascia .. .. .	62	2
Bones .. .. .	36	5
Spine .. .. .	15	—
Other bones .. .. .	21	—
Kidney .. .. .	34	7
Brain .. .. .	12	4
Spleen .. .. .	14	1
Heart .. .. .	2	1
Thyroid .. .. .	2	—
Pancreas .. .. .	1	—
Breast .. .. .	1	—
Parotid .. .. .	1	—
Prostate .. .. .	1	—
Total .. .. .	1,304	151

The cases are grouped under the names or tissues which constituted their main location, but in a large proportion the cysts involved more than one part of the body. Particularly common are the liver *plus* peritoneal cavity and the liver *plus* lung combinations.

The data obtainable from these records have on many occasions been made use of by Fellows in the preparation of articles for publication.

It is a matter for regret that the quality of the case notes is poor in many instances. Closer supervision of house surgeons' work in this connexion is urgently needed.

In most Australian hospitals and in some of the New Zealand ones inquiries reveal that the number of hydatid cases has diminished markedly in recent years. This fact may account in part for the difficulty experienced in obtaining records, but not for all of it. A large number of cases entering hospital, perhaps more than half of them, escape the Registry and pass into the limbo of forgotten history. Fellows of the College serving on hospital staffs might make a point of instructing their house surgeons to inscribe on the hydatid record form supplied a copy of their notes on the hydatid cases and have this forwarded to the Registrar-in-Chief.

The records from Australia are just about equal in number to those of New Zealand origin.

#### Filing System.

The records are filed in numerical order in Manila board folders each containing ten records.

Every ten folders, that is to say every 100 records, occupy a separate drawer or compartment in a cabinet. This makes for convenience in finding and replacing individual records. The index cards of stiff cardboard are stored in two strong drawers, the Australian cards in one drawer, the New Zealand cards in the other. I have copies for my own use on smaller cards.

The index cards are alphabetically filed and are grouped under the headings of the region of the body affected or mainly affected. Any index card can therefore be easily found by its alphabetical position in its appropriate regional group and its registry record number obtained. If thought advisable, the names and record numbers given in each group could easily be summarized in book form in a separate alphabetical index.

In certain cases the name of the patient has not been stated or initials only have been given. The index cards in these cases are all grouped together under the heading X.

*Précis.*—The index cards also give a brief précis of the important features of each case. Points of exceptional interest are emphasized, and deaths are clearly marked in red.

The data given on any index card or group of cards could easily be copied without much trouble or expense and sent by post to any Fellow applying for such information. He may find that it is not then necessary to consult the actual case records.

#### Acknowledgements.

Special thanks for help in securing and forwarding records are due to the College Secretary, Mr. H. G. Wheeler; to Mr. Julian Smith, junior, and Mr. G. R. A. Syme, of the Library staff; to the various local registrars in Australia and New Zealand; to the medical superintendents, registrars and resident surgeons of many hospitals; and to numerous surgical colleagues who have taken a lively interest in the work of the registry.

The local registrars who continue in office are Professor H. R. Dew (Sydney), Ian Hamilton (Adelaide), F. Clark (Perth), T. Giblin (Hobart), J. Fitzsimons (Auckland), D. Whyte (Wellington), D. M. Dickson (Christchurch) and R. A. H. Fulton (Dunedin). Some have been decidedly more helpful than others, but to all of them grateful appreciation of their services is here recorded.

L. E. BARNETT,  
Registrar-in-Chief.

### ANNUAL GENERAL MEETING.

THE Council of the College met during the period of the twelfth annual general meeting, and the following matters arising out of the meeting are published for the information of Fellows:



**Election of President and Vice-Presidents.**

Sir Hugh Devine was elected to the presidency of the College. Sir Alan Newton was reelected a Vice-President of the College, and Sir John McKelvey was also elected to the office of a Vice-President.

**Election of Council.**

Six nominations were received for the six vacancies on the Council. Sir Hugh Devine, Sir John McKelvey, Sir Alan Newton, Sir Robert Wade and Mr. H. R. G. Poate, retiring members of the Council, were renominated. Sir Hugh Acland indicated that he did not seek reelection, and Professor F. Gordon Bell was nominated in his stead. The following were declared elected members of the Council: Sir Hugh Devine, Sir John McKelvey, Sir Alan Newton, Sir Robert Wade, Mr. F. Gordon Bell and Mr. H. R. G. Poate.

**Appointment of Censor-in-Chief.**

Sir Alan Newton was reappointed Censor-in-Chief of the College.

**Appointment of Honorary Treasurer.**

Mr. Balcombe Quick was reappointed Honorary Treasurer of the College.

**Appointment of Executive Committee.**

The following members of the Council were appointed an Executive Committee: Sir Hugh Devine, Sir Alan Newton, A. L. Kenny, T. E. Victor Hurley, Balcombe Quick.

**Appointment of State and Dominion Committees.**

The following appointments were made:

*New South Wales:* A. J. Aspinall, V. M. Coppleson, H. R. Dew, B. T. Edye, J. W. S. Laidley, A. M. McIntosh, I. Douglas Miller.

*Queensland:* J. C. Hemsley, A. E. Lee, B. T. Mayes, H. S. McLelland, J. J. Power, Neville G. Sutton.

*South Australia:* R. M. Glynn, I. B. Jose, L. C. E. Lindon, P. S. Messent, B. H. Swift, L. A. Wilson.

*Tasmania:* F. W. Fay, J. Bruce Hamilton, D. Parker.

*Victoria:* W. A. Hailes, A. Fay Maclure, J. Newman Morris, Henry Searby, C. Gordon Shaw, John H. Shaw, B. T. Zwar.

*Western Australia:* F. J. Clark, H. B. Gill, D. D. Paton.

*Dominion of New Zealand:* F. S. Batchelor, P. Stanley Foster, Sir Carrick Robertson, T. D. M. Stout, D. S. Wylie.

**Appointment of State and Dominion Hospital Committees.**

The following appointments were made:

*New South Wales:* A. J. Aspinall, A. S. D. Barton, T. Hamilton, C. B. Howse, J. W. S. Laidley, T. W. Lipscomb, I. Douglas Miller, J. S. MacMahon, Clarence Read, H. H. Schlink, J. C. Storey, Sir Robert Wade, C. E. Winston.

*Queensland:* E. D. Ahern, J. C. Hemsley, A. E. Lee, H. S. McLelland, Neville Sutton.

*South Australia:* A. M. Cudmore, H. M. Jay, I. B. Jose, Sir Henry Newland, T. G. Wilson.

*Victoria:* A. E. Brown, Sir Hugh Devine, T. E. Victor Hurley, Fay Maclure, J. Newman Morris, Sir Alan Newton, C. Gordon Shaw, Henry Searby, B. T. Zwar.

*Western Australia:* J. P. Ainslie, F. J. Clark, H. H. Stewart.

*Dominion of New Zealand:* F. S. Batchelor, F. Gordon Bell, P. Stanley Foster, Sir Carrick Robertson, T. D. M. Stout, D. S. Wylie.

**Admission of New Fellows.**

The following new Fellows of the College were admitted by the Council:

**General Surgery.**

*New Zealand:* William Makuri Cotter.

*New South Wales:* Stanley Hains Lovell, Walter Stafford McGrath, Edward Gerard MacMahon.

*Queensland:* George Hayes Brandis.

*South Australia:* Alan Frank Hobbs, Alistair Campbell McEachern.

*Victoria:* Norman Marshall Harry, James Cuming Stewart.

#### *Ophthalmology.*

*New South Wales:* Keith Boyce Armstrong.

*Victoria:* George Alexander Brew.

## ANNUAL BUSINESS MEETING.

THE annual business meeting was held at the College on Thursday, March 16, 1939, at 7.30 p.m.

#### *Report of the Council.*

The Council submitted the following report to Fellows of the College.

The Council of the College takes pleasure in submitting to Fellows the following statement recording College activities during the twelve months ended January 31, 1939.

#### *Meetings of the Executive Committee.*

The Executive Committee of the Council has met on 16 occasions. The attendances were as follows:

Sir Hugh Devine .....	6 <sup>1</sup>	Balcombe Quick .....	12
Sir Alan Newton .....	16	Julian Smith .....	11
T. Victor Hurley .....	5 <sup>1</sup>	G. R. A. Syme .....	15
A. L. Kenny .....	16		

#### *Meetings of the Council.*

Three meetings of the Council have been held since the eleventh annual general meeting of the College. The attendances were as follows:

Sir Louis Barnett .....	1	A. L. Kenny .....	2
Sir Hugh Devine .....	1	Sir Henry Newland .....	3
Sir Alan Newton .....	2	H. R. G. Poate .....	3
E. D. Ahern .....	2	Balcombe Quick .....	3
George Bell .....	3	Sir Robert Wade .....	2
T. E. Victor Hurley .....	1		

#### *Number of Fellows of the College.*

At present the College has a fellowship of 656. This figure is made up as follows:

Honorary Fellows .....	17
Overseas Fellows .....	12
New South Wales .....	180
New Zealand .....	134
Queensland .....	50
South Australia .....	46
Tasmania .....	14
Victoria .....	179
Western Australia .....	24
<b>Total .....</b>	<b>656</b>

#### *Death of Fellows.*

The Council regrets having to report the deaths of the following Fellows: H. C. E. Donovan, T. Farranridge and C. L. Swinnerton Duke, of New South Wales; W. N. Robertson and G. Thomson, of Queensland; Carl V. Stephens, W. J. Long and John Gordon, of Victoria.

<sup>1</sup> Absent in England.

*Death of Dr. George W. Swift.*

It is with regret that the Council advises Fellows of the death of Dr. George W. Swift, who was present at the eleventh annual general meeting of the College.

*Honours.*

The following Fellows have been honoured by His Majesty the King: Sir Robert Wade, Sir John Ramsay, A. L. Kenny, C.B.E.

Sir Henry Newland received the honour of an Honorary Fellowship of the Association of Surgeons of Great Britain and Ireland.

*Primary Fellowship Examination of the Royal College of Surgeons of England.*

Advice has been received from the Council of the Royal College of Surgeons of England that it is proposed to repeat the Primary Fellowship Examination in Australasia every three years, and it has been suggested that the next examination should be held in February, 1941.

*Charter.*

At a meeting held on November 30, 1938, Fellows unanimously approved of the action of the Council in applying to His Majesty the King for the grant of a Petition, Charter and By-Laws, and also approved of the draft documents submitted to the meeting. It is confidently expected that incorporation by Royal Charter will be granted by His Majesty during the current year.

*The Gordon Craig Library.*

The Gordon Craig Library continues to be of value to Fellows. Spacious accommodation has been provided in the upstairs section of the College building. The room has been designed with the object of making available private reading facilities where Fellows may work undisturbed. A librarian is on duty to attend to the requirements of Fellows.

While the Council is satisfied with the demands made on the services rendered from the library, it is hopeful that, in course of time, still greater use will be made of the facilities placed at the disposal of Fellows. The Council desires to place on record its gratitude to the following donors of books to the library: Sir Louis Barnett, Sir James Barrett, Sir Hugh Devine, Sir Henry Newland, Sir Alan Newton, Sir Alfred Webb-Johnson, M. S. S. Earlam, Robert Fowler, G. H. Hogg, J. Leon Jona, Dr. C. H. Kellaway, the Liverpool Medical Institution, Dr. D. G. Maitland, H. Cairns Lloyd, J. Newman Morris, J. Hardie Neil, C. H. Osborn, Lambert Rogers, G. R. A. Syme, Iowa State Medical Library.

The proposal to develop a film library is being proceeded with, and Sir Hugh Devine, Balcombe Quick and G. R. A. Syme have been appointed a Film Library Subcommittee.

The library catalogue is being brought up to date and will be again issued to Fellows in June, 1939.

*Gordon Craig Educational and Research Scholarships.*

Wide publicity was given to the Gordon Craig Educational and Research Scholarships, but few applications for assistance have been received. As this lack of interest in the scholarships was apparently due to the fact that the announcement calling for applications was not sufficiently understood, it was decided that the scholarships should be readvertised and fuller details given. A letter has been published in *The Medical Journal of Australia* and in *The New Zealand Medical Journal*, clearly stating the objects of the scholarships and the policy which would be adopted by the Council in awarding them. The date by which applications should be lodged has been extended from December 31, 1938, to June 30, 1939.

*Journal.*

During the year under review the journal has been published in new form, having a new cover and a new type of letterpress. In addition, each issue of the journal has included an additional forme. It is hoped to continue the publication of

an enlarged journal for some little time to come. The Council urges Fellows to support those advertisers who take advertising space in THE AUSTRALIAN AND NEW ZEALAND JOURNAL OF SURGERY, and it wishes to stress the fact that the purchase of space by advertisers makes the publication of the journal commercially possible. It therefore hopes that the enterprise of advertisers in THE AUSTRALIAN AND NEW ZEALAND JOURNAL OF SURGERY will receive recognition from Fellows of the College. The Council further asks Fellows to cooperate with the publishers, wherever possible, for the promotion of journal sales.

#### *Syme Scholarship.*

The Syme Scholarship for 1938 was awarded to Dr. J. F. Hughes and Dr. A. W. M. Hutson. The subject for the research was "Thoracoplasty for Pulmonary Tuberculosis: A Review of Approximately Fifty Cases done at the Austin Hospital, from the Clinical, Radiological and Surgical Viewpoints". The result of the work will be presented by the scholars at a meeting to be held at Prince Henry's Hospital on the morning of Saturday, March 18, 1939, this meeting being part of the programme for the twelfth annual general meeting.

#### *Ryan Scholarships.*

The examinations for the Michael and J. P. Ryan Scholarships in Surgery were held in December, 1938. The following candidates were successful:

*The Michael Ryan Scholarship in Surgery:* Dr. Donald Shale.

*The J. P. Ryan Scholarship in Surgery:* Dr. Keith Cowen.

#### *Hydatid Registry.*

The Hydatid Registry has now been received from the Hydatid Registrar-in-Chief, Sir Louis Barnett, and is housed in the Gordon Craig Library. The register contains a comprehensive record of over 1,300 cases of hydatid disease and is a most valuable acquisition to the library. It is the wish of Sir Louis Barnett and of the Council that efforts to increase the number of records housed in the registry should not be relaxed. The medical superintendents at all general hospitals throughout Australia and New Zealand have been requested to cooperate with the College in connection with the work of the registry. The response received is gratifying, and records are continuously being received at the College office. These records are sent to Sir Louis Barnett for his personal examination and attention. With the receipt of the registry, the Council realized the magnitude of the task undertaken by Sir Louis Barnett, and it is deeply grateful to him.

#### *Portrait of Professor F. Wood Jones.*

Before Professor Wood Jones left Australia a committee of friends arranged for his portrait to be painted. It was the wish of Professor F. Wood Jones and of the portrait committee that the portrait should hang in the College foyer. On December 19, 1938, the portrait was unveiled.

#### *Tenth Australian Cancer Conference.*

Sir Louis Barnett and T. F. Ryan officially represented the College at the Tenth Australian Cancer Conference, which was held in Wellington in February, 1939.

#### *Evening Meetings.*

The following evening meetings have been held at the College:

1. A lecture by the late Dr. George Swift, entitled "Cerebro-Cranial Injuries", on March 29, 1938.
2. Lectures by Fay Maclure, entitled "Mechanical Principles in the Causation and Treatment of Disease", on June 30 and July 7, 1938.
3. On August 25, 1938, R. F. O'Sullivan spoke on "Hysterectomy", his lecture being illustrated by a motion picture in colour.
4. G. C. Scantlebury spoke on "Sinusitis" in October, 1938.
5. A lecture by Dr. H. E. Robertson, entitled "Duodenal Ulcer", on January 19, 1939.

The last-mentioned meeting was held under the joint auspices of the Royal Australasian College of Physicians and this College.

*State and Dominion Meetings.*

During the twelve months the following meetings have been arranged by the various State and Dominion Committees:

*New South Wales:* Annual dinner, held in Sydney on December 7, 1938.

*New Zealand:* Annual meeting, held in Christchurch on September 1, 1938.

*Queensland:* Annual meeting, held in Brisbane on August 10 and 11, 1938.

*South Australia:* Annual meeting, held in Adelaide on November 2, 1938.

*Tasmania:* Annual meeting, held in Hobart on October 7 and 8, 1938.

*Victoria:* Half-day meeting, held at Saint Vincent's Hospital, Melbourne, on June 17, 1938; annual meeting, held in Melbourne on September 15 and 16, 1938; half-day meeting, held at the Royal Melbourne Hospital on November 9, 1938.

*Western Australia:* Annual meeting, held in Perth on April 1 and 2, 1938.

*Hospital Records.*

The Council decided to make available to the central bodies charged with the administration of hospitals, and through those bodies to the administrators of general hospitals, copies of the report and specimen rulings prepared by the Victorian Hospital Committee. Great interest has been shown in this report and in the specimen rulings recommended in it, and numerous copies have been forwarded to institutions interested.

The Council desires to express its appreciation to Henry Searby, Honorary Secretary of the Victorian Hospital Committee, and to members of the Victorian Hospital Committee for the valuable work which they have performed.

*Royal Australasian College of Physicians.*

Sir Hugh Devine officially represented the President and Council of the Royal Australasian College of Surgeons at the inaugural meetings of the Royal Australasian College of Physicians in Sydney in December, 1938. He presented a message of goodwill to our sister college.

On behalf of Fellows, the Council is presenting to the Royal Australasian College of Physicians a council table as an expression of the esteem in which the Royal Australasian College of Physicians is held by the Royal Australasian College of Surgeons.

*Balance Sheet and Accounts.*

Copies of the balance sheet and accounts are available for inspection, and Fellows will be asked at this meeting formally to adopt them. Any information concerning the accounts will be supplied on request.

*Election of Council.*

Six nominations were received to fill the six vacancies on the Council. With the exception of Sir Hugh Acland, all the retiring members of the Council were renominated. Sir Hugh Acland did not seek reelection, and nominated Professor F. Gordon Bell as his successor. The Council desires to place on record its appreciation of the services rendered to the College by Sir Hugh Acland.

*Gifts to the College.*

The Executive Committee desires to express its gratitude to the following donors: Sir Alfred Webb-Johnson, portrait of Lord Lister and books; S. A. Ewing, a number of portraits of great historical interest; Mr. W. H. Preston, a set of surgical instruments in use in 1860; Mr. Leo Doyle and Dr. K. F. Russell, portraits.

*Western Australian Meeting.*

For the first time since the foundation of the College a representative of the Council visited Western Australia in April, 1938. Sir Hugh Devine delivered a lecture in the Winthrop Hall of the University of Western Australia. The audience consisted of representatives of the professions and of the University, and also of leading citizens and representatives of public bodies throughout the State. In addition, Sir Hugh Devine delivered several clinical addresses.

H. G. WHEELER,  
Secretary.

The report was unanimously adopted.

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**Balance Sheets and Accounts.**

Both the general balance sheet and the Craig Endowment balance sheet at January 31, 1939, were submitted to the meeting.

It was unanimously resolved that both balance sheets be adopted. The balance sheets are published hereunder for the information of Fellows.

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**NEW SOUTH WALES EVENING MEETING.**

On Thursday, March 23, 1939, Sir Alfred Webb-Johnson, C.B.E., D.S.O., F.R.C.S., delivered a lecture at the Sydney Hospital, his subject being "The History of Surgery in London".

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**NEW ZEALAND MEETING.**

On Wednesday, March 29, 1939, Sir Alfred Webb-Johnson, C.B.E., D.S.O., F.R.C.S., delivered a lecture in Wellington, his subject being "Some Historical Points in the Corporate Life of British Surgeons".

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**MEETING ARRANGED BY THE VICTORIAN STATE COMMITTEE.**

THE Victorian State Committee held a meeting at Ballarat on Saturday, May 27, 1939. The following programme was presented:

Ballarat Base Hospital: Operative and Clinical Demonstrations, 2.30 p.m.

N. A. Longden: "Cholecystectomy."

W. R. D. Griffiths: "Hysterectomy."

M. Robinson: "Inguinal Herniotomy."

G. R. Davidson: "Suprapubic Prostatectomy."

Craig's Hotel: Lecturettes, 8.15 p.m.

N. A. Longden: "Appendicitis, with Special Reference to Drainage and Appendical Peritonitis."

S. C. Fitzpatrick: "A Study of the Thoracic Approach to the Liver in Subphrenic Abscesses and Hydatid Cysts."

W. R. D. Griffiths: "Some Arguments, Based on Recent Experiences, for a More Frequent Performance of Total Hysterectomy."

G. R. Davidson: A short series of slides, demonstrating unusual urological cases: (a) diverticulum of the urethra, causing retention of urine, (b) pedicled cyst of the prostate, (c) an infected accessory urethral canal, (d) torsion of the sessile hydatid of Morgagni, (e) calculus pyonephrosis occurring in one limb of a horseshoe kidney.

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**MEETING ARRANGED BY THE NEW SOUTH WALES STATE COMMITTEE.**

THE New South Wales State Committee held a meeting in the Robert H. Todd Assembly Hall, 135 to 137 Macquarie Street, Sydney, on Wednesday, June 28, 1939, at 8.15 p.m. The following programme was presented:

W. I. T. Hotten, M.B., Ch.M., D.A.R.C.P. & S.: "Anæsthesia in Surgery of the Biliary Tract."

C. E. Winston: "Post-Operative Complications in Surgery of the Biliary Tract."



ROYAL AUSTRALASIAN COLLEGE OF SURGEONS.  
Balance Sheet as at January 31, 1939.

LIABILITIES.		ASSETS.	
£	s. d.	£	s. d.
Sundry Creditors .. ..	16 14 3	Cash on Hand .. ..	10 0 0
Subscriptions Paid in Advance .. ..	7 17 6	The Union Bank of Australia Limited—Balance at Credit .. ..	501 18 9
Examination Expenses Reserve .. ..	376 18 11	Advances to Honorary Secretaries .. ..	80 0 0
Prince Henry's Hospital, Melbourne—Post-graduate Teaching Fund .. ..	10 10 0	Investment .. ..	2,819 11 6
Gift Account .. ..	1,088 16 9	Syme Memorial Endowment .. ..	5,119 17 9
Syme Memorial Endowment Fund .. ..	2,510 0 0	T. F. Ryan Endowment .. ..	5,275 5 1
Syme Memorial Endowment Fund—Income Account .. ..	309 11 6	General .. ..	13,214 14 4
T. F. Ryan Endowment Fund .. ..	5,100 0 0	Subscriptions in Arrear .. ..	236 10 0
Michael Ryan Scholarship Income Account .. ..	9 18 11	Sundry Debtors .. ..	85 12 7
J. F. Ryan Scholarship Income Account .. ..	9 18 11	Land and Buildings—at cost .. ..	13,854 0 7
Surplus Account—		Plant and Furniture—at cost—less depreciation .. ..	1,525 0 0
Balance, January 31, 1938 .. ..	19,535 7 10	Great Maccartney valuation .. ..	569 0 0
Balance, Transfer from Building Fund .. ..	55 5 0	Craig Endowment Assets (as per separate Balance Sheet) .. ..	58,117 11 7
Add Surplus Revenue for the year ended January 31, 1939 .. ..	1,267 2 9		
Craig Endowment Fund (as per separate Balance Sheet) .. ..	58,117 11 7		
	£88,415 13 10		£88,415 13 10

L. E. BARNETT, President.  
BALCOMBE QUICK, Honorary Treasurer.  
H. G. WHEELER, Secretary.

Audited and found correct.  
YOUNG AND OUTHWAITE,  
Chartered Accountants (Australia),  
368 Collins Street, Melbourne.  
February 21, 1939.

CRAIG ENDOWMENT.  
Balance Sheet as at January 31, 1939.

LIABILITIES.		ASSETS.	
£	s. d.	£	s. d.
Endowment Revenue Account .. ..	55,254 11 4	The Union Bank of Australia Limited—Balance at Credit .. ..	1,644 6 2
Balance, January 31, 1938 .. ..	985 16 5	The Bank of Australasia—Balance at Credit .. ..	55 24 0
Add Surplus for the year ended January 31, 1939 .. ..	1,897 3 10	Endowment Fund—at cost .. ..	811 2 10
	2,893 0 3	Gordon Craig Library—at cost—less depreciation .. ..	417 0 0
	£58,117 11 7		£58,117 11 7

L. E. BARNETT, President.  
BALCOMBE QUICK, Honorary Treasurer.  
H. G. WHEELER, Secretary.

Audited and found correct.  
YOUNG AND OUTHWAITE,  
Chartered Accountants (Australia),  
368 Collins Street, Melbourne.  
February 21, 1939.

## THE GORDON CRAIG LIBRARY.

THE attention of Fellows is drawn to the following papers which have recently been fully translated from foreign literature:

- "Aneurysmal Ruptures of the Abdominal Aorta and its Branches", by Paul Carnot, from *Le monde médical*, Number 860, February, 1935, pages 89 to 94.
- "Juvenile Cataract with Dermatoses (*Cataracta Syndermatotica*)", by Dr. Ingemar Kugelberg, from *Klinische Monatsblätter für Augenheilkunde*, Volume xcii, 1934, pages 484 to 508.
- "Contribution to the Study of the Mechanism of Spontaneous Obliteration of Tuberculous Cavities", by R. Poinso and Y. Poussines, from *La presse médicale*, Number 23, March, 1938, pages 439 to 441.
- "Tuberculous Necroses and Pulmonary Cavities", by G. Derscheid and P. Toussaint, from *La presse médicale*, December, 1937, page 1739.
- "Intertrochanteric Osteotomy in the Treatment of Pseudo-Arthroses of the Neck of the Femur", by V. Putti, from *La presse médicale*, December, 1937, pages 1841 to 1843.
- "Significance of the Cholangiograph for Practice and Research", by Prof. Dr. Fr. Bernhard, senior physician at the clinic, from Surgical University Clinic at Giessen.
- "On the Pathogenesis of the Mucocele of the Sphenoid Sinus, with a Description of a New Rare Case", by G. B. Fornari, assistant, Ear, Nose and Throat Clinic of the University of Catania, from *Archivio di Otologia, Rinologia e Laringologia*, Volume xlix, 1937, page 315.
- "Descending Cysto-Urethrography, its Technique and Indications", from *Journal d'Urologie*, Volume xl, 1935, pages 499 to 511.
- "The Accommodation of the Reptilian Eye", by Theodor Beer.
- "The Accommodation of the Eye of the Cephalopoda (Cuttle-Fish)", by Theodor Beer.
- "Development of an Audition Theory and Galvanotherapy in Connection with After-Images and Electrical Nervous Phenomena of Different Sensory Regions", by E. Kupfer, from *Monatsschrift für Ohrenheilkunde und Laryngo-Rhinologie*, Volume lxi, 1934.
- "Contribution to the Chapter of Inflammatory Pseudo-Tumours of the Orbita Apropos of Two Cases of Unilateral Exophthalmos", by Hans Soutter, from *Klinische Monatsblätter für Augenheilkunde*, Volume c, January to June, 1938, pages 29 to 42.
- "Determining the Quantity of Folliculine Present in the Female: Criticism of Results and the Study of a New Test", by A. Durupt, from *Gynécologie et Obstétrique*, Volume xxxvii, 1938.
- "A Clinical Method of Standardizing the Follicular Hormone", by A. Durupt, from *Gynécologie et Obstétrique*, Volume xxxvii, 1938.
- "The Question of the Primary Closing of the Bladder in Cases of Suprapubic Prostatectomy, According to Harris", by Prof. T. Hryntschak, from *Zeitschrift für Urologie*, 1938.

Copies of these translations are available to Fellows.

Once again the Council wishes to remind Fellows that the following services are available in the Gordon Craig Library:

1. Fellows may receive, on loan, any text-book, monograph, journal or reprint available at the College.
2. Fellows resident in the Commonwealth of Australia will not be permitted to retain a book for more than one month, and Fellows resident in the Dominion of New Zealand for more than two months. Books not returned at the expiration of this time will be charged to Fellows.
3. No Fellow will be allowed to borrow more than two books or two journals, or one book and one journal, at one time without special permission.
4. Translations from foreign journals received in the library will be supplied to Fellows free of charge.
5. Photostatic copies of articles and illustrations appearing in text-books, monographs, medical and surgical journals received at the College will be supplied to Fellows free of charge.

6. References will be supplied to Fellows of the College who are writing papers. Information concerning articles published on any particular subject, or by any particular author, will be supplied. Should the journal required not be available in the College library, facilities are available whereby Fellows may be informed whether the journal they require is available in Australia and, if so, at what library.

Fellows are invited to avail themselves of these services.

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### Obituary.

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#### CHARLES HERBERT FAGGE.

It is with deep regret that we have to announce the death of a distinguished Honorary Fellow of the College, the late Charles Herbert Fagge. The late Mr. Fagge was consulting surgeon to Guy's Hospital and to the Evelina Hospital for Children. He came from a family which has been associated with Guy's for generations, one of which was John Hilton, the author of "Rest and Pain".

Charles Herbert Fagge was a gold medallist of his school and won the exhibition in anatomy, medicine and surgery. He was a Master of Surgery of London. He became a full surgeon of Guy's in 1917. During the War he was attached to the Second London General Hospital, and served as consulting surgeon to the Red Cross Hospital for Officers at the Fishmongers' Hall. He also served in France. He was a Fellow and Vice-President of the Royal College of Surgeons of England, and delivered the Bradshaw Lecture in 1928 and the Hunterian Oration in 1936. He was an examiner in anatomy and a member of the Court of Examiners of the Royal College of Surgeons of England. He was also examiner for Cambridge and London Universities. In 1932 he was deputed by the Council of the Royal College of Surgeons of England to travel to Australia and present a Great Mace to the Royal Australasian College of Surgeons. On this visit he delivered the Syme Oration at the Wilson Hall and received an Honorary Fellowship from the Royal Australasian College of Surgeons, and an honorary degree of M.D. of the University of Melbourne. During this visit to Australia he made many friends. Those Fellows of the College who were privileged to meet him on this occasion will mourn his passing and keenly feel his loss. He was President of the Association of Surgeons of Great Britain and Ireland in 1933. C. H. Fagge was an outstanding teacher, a wise and conscientious surgeon and a loyal colleague.

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#### JOHN LAWRENCE McKELVEY.

By the death of Sir John McKelvey, which occurred on July 7, Australia has lost a great surgeon and a great teacher, and the Royal Australasian College of Surgeons a Vice-President and one of its most distinguished Fellows.

Born in Queensland, Sir John received his early education in that State. He graduated from the Sydney University in 1905. He was appointed to the resident staff of the Royal Prince Alfred Hospital, and later became its senior resident medical officer. In 1907 he was appointed demonstrator in anatomy at the University of Sydney, and in 1908 became medical superintendent of the Royal Melbourne Hospital. After holding this position for two years, he returned to the Royal Prince Alfred Hospital as medical superintendent, a position which he held till 1911, when he became an honorary surgeon of that hospital. He was appointed honorary surgeon to Saint Vincent's Hospital in 1913. Sir John McKelvey was a surgical tutor in operative surgery at the University of Sydney and lecturer in clinical surgery and examiner in clinical and operative surgery. He was a Foundation Fellow and a member of the Board of Censors of the Royal Australasian College of Surgeons. He was knighted in 1933.

A highly skilled and wise surgeon, Sir John McKelvey was also a man of great personal charm. In his earlier years he was closely associated with Sir Alexander MacCormick, whose influence could be seen in all his work, and, like this master surgeon, a sound knowledge of anatomy was the basis on which he built his surgery. The

greater part of his life was devoted to the service of the poor and to the teaching of students in the clinical schools of the Royal Prince Alfred and Saint Vincent's Hospitals. His many former students will readily testify to his ability as a teacher, and through them his influence on surgery in Australia will endure.

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### Notices.

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#### THE BRITISH POSTGRADUATE MEDICAL SCHOOL.

THE College wishes to draw attention to the announcement of the British Postgraduate Medical School on page xxxvi of the advertisements.

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#### NEW DEVELOPMENTS IN SURGICAL EQUIPMENT.

THE attention of Fellows is drawn to pages xx and xxxii among the advertisements, which illustrate some recent developments in surgical equipment. The Editorial Committee is responsible for the selection of the equipment illustrated thereon. The publishers will be pleased, whenever possible, to supply the names and addresses of the manufacturers to anyone requiring such information.

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### Editorial Notices.

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EDITORIAL communications should be addressed to the Chairman of the Editorial Committee, 57 Collins Street, Melbourne, or to any member of the Editorial Committee. It is understood that original articles forwarded for publication are offered to THE AUSTRALIAN AND NEW ZEALAND JOURNAL OF SURGERY solely, unless the contrary be stated.

Reprints can be supplied at cost price; the minimum number is fifty copies. Orders for reprints must be given when the proof is returned.

Exchange journals should be addressed to the Honorary Librarian, Royal Australasian College of Surgeons, Spring Street, Melbourne, C.I, Victoria, Australia.

Business communications and remittances should be addressed to Butterworth and Co. (Australia) Ltd., 8 O'Connell Street, Sydney.

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COMMONWEALTH



OF AUSTRALIA

DEPARTMENT OF HEALTH

# TETANUS ANTITOXIN

## Globulins, refined and concentrated

The attention of the medical profession is directed to the high quality of Tetanus Antitoxin which is being issued by the Commonwealth Serum Laboratories.

**The Laboratories issue only concentrated and purified Serum, which is of high potency and small volume.**

During the preparation of the concentrated serum those fractions of the protein content of the immune antitoxic serum which are most disposed to induce serum sickness, are eliminated.

The concentrated serum contains in a very small bulk many thousands of antitoxin units. Before issue it is carefully tested for unitage and sterility by methods which have the approval of the best authorities.

The serum in its present form is a relatively stable product and is not disposed to precipitate or to produce serum sickness. It has been employed for routine use in the large Metropolitan Hospitals in Australia.

Tetanus Antitoxin Globulins, refined and concentrated, can be obtained in the following quantities:

1 ampoule containing 500 units (U.S.A.) = 1,000 International units .. .. .	1/6
1 ampoule containing 1,000 units (U.S.A.) = 2,000 International units .. .. .	3/-
1 ampoule containing 1,500 units (U.S.A.) = 3,000 International units .. .. .	4/-
3 x 1,500 unit ampoules in one package .. .. .	11/-
1 ampoule containing 5,000 units (U.S.A.) = 10,000 International units .. .. .	11/6
1 ampoule containing 10,000 units (U.S.A.) = 20,000 International units .. .. .	20/-

Supplies may be obtained from the COMMONWEALTH SERUM LABORATORIES, Royal Park, Victoria, and also from the following: Director-General of Health, Canberra; Chief Quarantine Officer (General), Anzac Square, Adelaide Street, Brisbane; Chief Quarantine Officer (General), Customs House, Circular Quay, Sydney, N.S.W.; Chief Quarantine Officer (General), C.M.L. Building, 41-47 King William Street, Adelaide, S.A.; Chief Quarantine Officer (General), G.P.O., Perth, W.A.; Chief Quarantine Officer (General), Commonwealth Health Laboratory, Launceston, Tasmania.

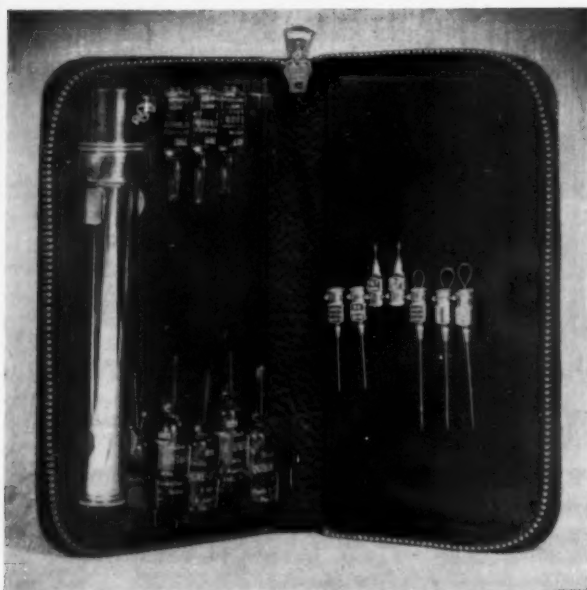
Supplies may also be obtained from The Director-General of Health, Wellington, N.Z.

# Gas-Gangrene Antitoxin (Perfringens)

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1 ampoule containing 4,000 units .. .. .	6/6 each
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**SYRINGE  
and  
AMPOULE CASE**

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**Price (without ampoules),  
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AND BLOOD SUGAR  
COLORIMETER**

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Full directions given for each process.

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TAYLORS, ELLIOTTS & AUSTRALIAN DRUG PTY. LTD.	- - - - -	
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the requirements  
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100% AUS-  
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Agents: K. G. LUKE LTD., Melbourne; RICHARD THOMSON LTD., Castlereagh Street, Sydney.



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**FAMOUS BECAUSE THEY SATISFY**

- ANÆSTHETIST** .prefers an anæsthetic that is simple and flexible in its administration . . . low cost . . . easily transported.
- SURGEON** . . . demands muscular relaxation and smooth anæsthesia.
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*Specify WOOLWICH and ELLIOTT brands when ordering supplies through your wholesale house or Government Stores Department.*

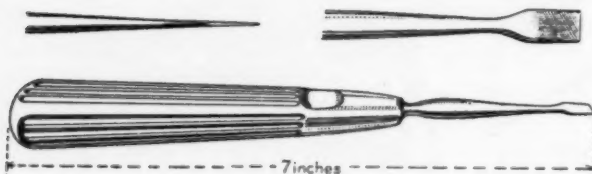
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## New Developments in Surgical Equipment.

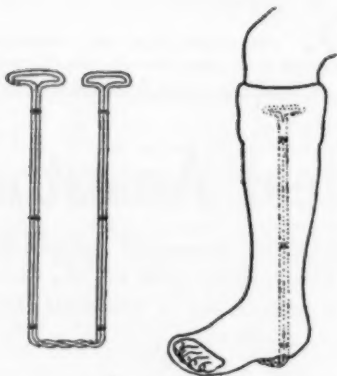


### A NEW KNIFE FOR THE REMOVAL OF THE MENISCUS.

(Walter Mercer, F.R.C.S. (Edin.), *The Journal of Bone and Joint Surgery*, Volume XXI, Number 2, April, 1939, page 474.)

The knife illustrated has the cutting edge placed distally in a manner similar to a miniature osteotome.

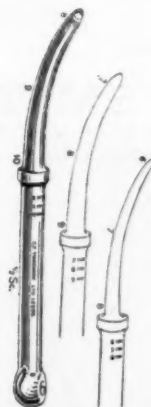
The illustration shows the knife reduced to half size.



### ALUMINIUM WIRE STIRRUP.

(*The Lancet*, March 11, 1939, page 578.)

An aluminium wire stirrup, for ambulatory plaster cases, which gives both lightness and strength. It is made from one piece of three millimetre gauge wire six feet in length.



### IMPROVED UTERINE DILATORS.

(*The Lancet*, April 8, 1939, page 827.)

The dilating portion of each instrument is a much elongated cone regularly tapering to the extremity. The diameter of the extremity of dilator Number 2 is that of the middle of Number 1. The diameter of the extremity of Number 3 is that of the middle of Number 2, and so on.

*These instruments are selected by the Editorial Committee, and the Publishers will be glad, whenever possible, to give the names of the suppliers to any subscriber.*

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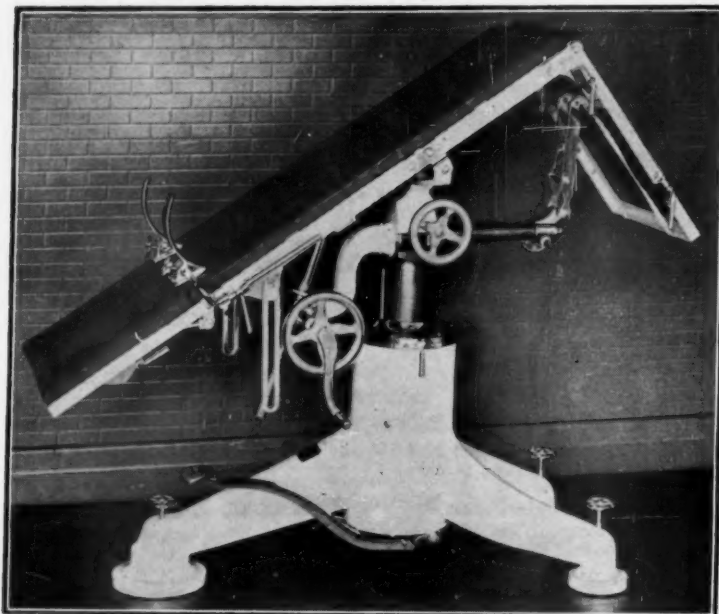
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By stimulating bladder musculature activity Doryl is often effective where otherwise catheterisation would have to be carried out. (Prof. Fraser, *B.M.J.*, June 18th, 1938.)

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*Senior Assistant Medical Officer (L.C.C.):* A. B. Field, M.B., B.Ch.  
*First Assistants:*  
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 J. K. Sutherland, M.B., Ch.B., M.R.C.P.  
*Visiting Gynaecologist:* Victor Bonney, M.S., M.D., F.R.C.S., F.R.A.C.S., M.R.C.P.  
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*Assistant Radiologist:* E. J. E. Topham, M.A., M.B., B.Ch., M.R.C.S., D.M.R.E.  
*Physicist:* L. H. Clark, M.Sc., Ph.D.

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Postgraduate students who require information or advice as to courses of study and postgraduate facilities in England should apply to the Dean. Information is also available regarding postgraduate facilities in America and on the Continent.

For the convenience of postgraduate students who are strangers to London and require advice as to postgraduate facilities and courses of study, a sub-office has been opened at **The London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1.** (Mus. 0943.)

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*First Assistants:*  
 A. L. Light, M.D., M.S., F.R.C.S. (Genito-urinary).  
 A. J. Watson, M.B., B.S., F.R.C.S. (Fractures and Orthopaedics).  
 R. H. Franklin, M.B., B.S., F.R.C.S.  
 R. Shackman, M.B., B.S., F.R.C.S.  
*Assistants:*  
 J. I. Griffiths, M.B., B.S., F.R.C.S. (Oto-rhinolaryngology).  
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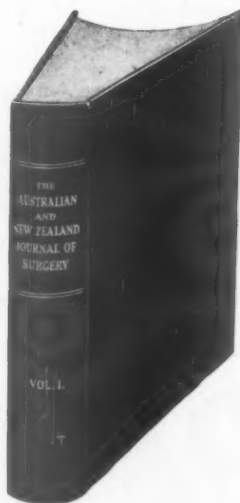
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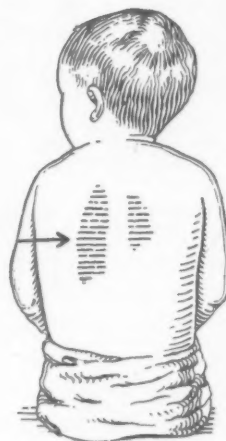
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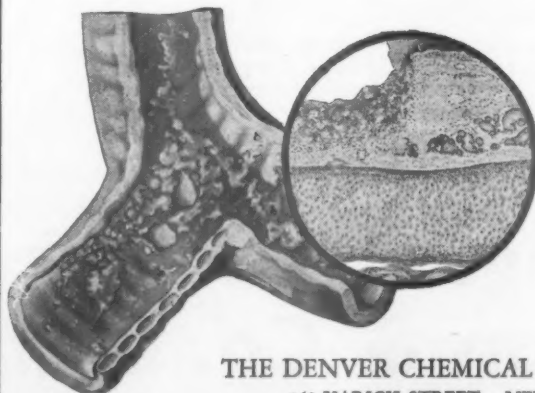
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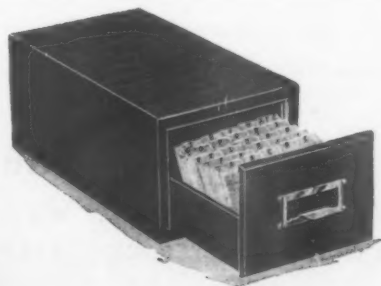
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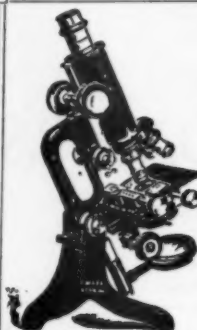
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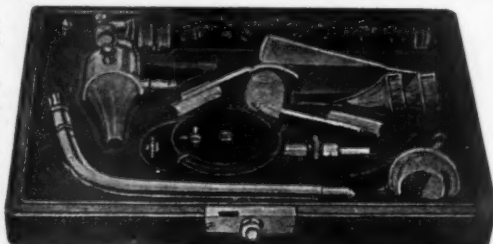
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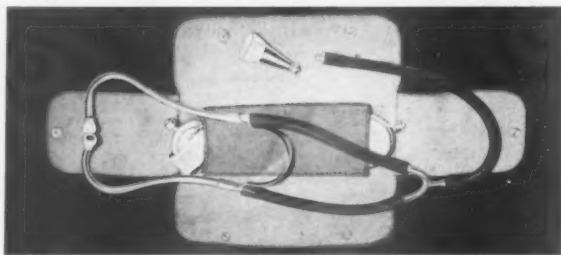
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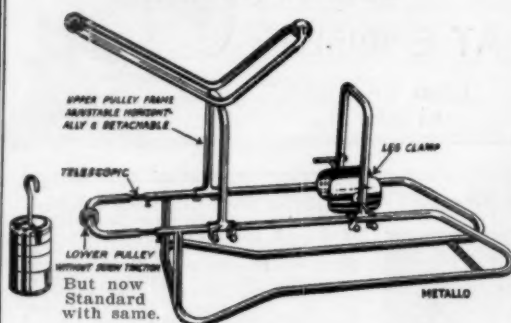
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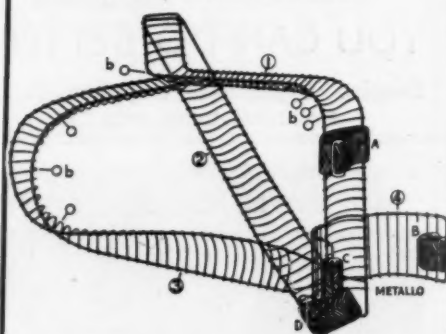
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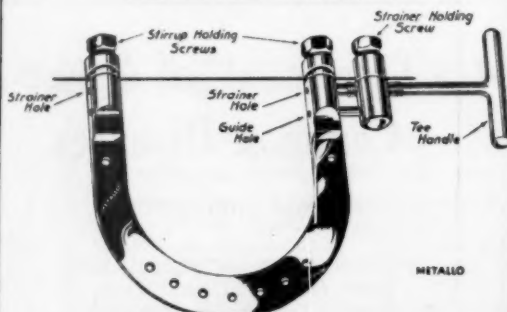
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